

Geo.

# ROCKS and MINERALS

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JANUARY - FEBRUARY, 1952

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A Magazine for  
Mineralogists,  
Geologists and  
Collectors



Official Journal  
of the  
Rocks and Minerals  
Association

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Whole No. 226

Vol. 27, No. 1 - 2

## 45th LIST OF FINE MINERALS

FRIEDELITE, Franklin, N. J. Pure pink xline mass. 5x1 3/4x1	\$ 6.00
CARNOTITE, South Australia. Coating Ilmenite. (Davidite) 2 3/4x2	2.50
WOODBRIDGEITE, Virginia. Xlline. fibrous mass. 3 1/2x2 1/4	2.00
BERYL v. AQUAMARINE, S. W. Africa. Fine blue terminated xl. 2 1/4x1 (57 grams); termination chipped. Including tax.	30.00
PYRARGYRITE, Saxony. Xld. w. yellow xls. of BARITE. 3x2x1	7.50
PERCYLITE, Peru. Minute xline. masses in earthy matrix. 2 1/2x2	2.00
SMITHSONITE, Arizona. Sky-blue with xld. surface. 3 1/2x3x2	3.50
FLUORITE, Cumberland. Group of large yellow xls. 3x2 1/2	2.50
SILVER, Cobalt, Ont. Platy mass w. some Smaltite. 3x2. 188 grams	3.50
TORBERNITE, Cornwall. Small xls. densely coating matrix. 2x1 3/4	3.50
ZIRCON, Norway. Xls. & xline. masses in rock. 3x2x2 (Fluorescent)	2.00
RUTILE, N. Carolina. Seven slender 1" xls. in mount	3.00
RHODOCHROSITE, Butte. Xld. with small Quartz xls. on mass. 3x2 1/2x1 1/2	3.00
BARITE, Cumberland. XI. colored deep red by Hematite. 4x1	2.00
WULFENITE, Los Lamentos, Mexico. Well xld. mass. 2x2	2.50
GADOLINITE, Sweden. Pure xline. mass. 3x2 (8 oz.)	3.00
PHARMACOSIDERITE, Cornwall. Olive-green xls. on rock. 4x2x1 1/2	4.00
PHENAKITE, Brazil. Twinned xl. group. 1 3/4x1 1/2x3/4. (Not cuttable)	5.00
CASSITERITE, Schlaggenwald. Good twin xls. on rock. 2 1/2x1 1/2x1 1/2	3.50
QUARTZ, Japan. "Japanese twin" xl. cloudy. 1 1/2x1 1/4	2.50
ILVAITE, Seriphos, Greece. Fine xl. 1 1/2x1 1/4 in specimen 2x1 1/2	3.00
GARNET, ESSONITE, Ala. Small xls. w. Clinochlore on rock. 2 1/2x2	2.50
NEPTUNITE, California. Xls. in Natrolite on rock. 2 1/2x2 1/2	2.50
URALITE, Alaska. Mass of good xls. 2x2	2.00
CHABAZITE v. ACADIALITE, Nova Scotia. Well xld., flesh-red. 3x2 1/2	2.50
DIOPTASE, Kirghese Steppes. Xld. on rock. 2 1/2x1 1/2x1 1/4	15.00
SILVER, Michigan. Crudely xld. mass with some rock. 3x2x1 1/2	7.50
LIROCONITE, Cornwall. Well xld., bright blue, in matrix. 2 1/2x2	10.00
HYPERTHENE, Gore Mt., N. Y. 2x1 1/2" xl. in xline. Almandite. 4x3x2	5.00
BORNITE, Cornwall Xld. (very rare). 2 1/2x1 1/2	3.00
APATITE, Durango. Gemmy transparent yellow xls. in matrix. 3 1/2x2x2	5.00
ARSENIC, Saxony. Mammillary mass. 2 1/4x1 1/2	2.00
TRAVERSELLITE, Ural Mts. Xld. with Garnet xls. 3 1/2x2 1/2x1 1/2	3.00
SPHALERITE, Franklin, N. J. Solid mass fl. orange-red under LW. 3x2x2	3.50
CERUSSITE, Tsumeb. Twin xls. on matrix. Fl. bright yellow, LW. 4x3	6.00
TOURMALINE, Newry, Maine. Pink and green large "watermelon" xls. in Quartz. 4 1/2x4x2. Fine characteristic specimen from this locality.	12.50
ARAGONITE, var. FLOS FERRI, Styria. White coralloidal mass. 5x3x2 1/2	3.50
PYRITE, Traversella. Very large octahedral xl., incomplete. 3x2 1/2	4.00
MALACHITE, Bridgeport, Pa. Xld. w. small Quartz xls. in rock. 3x2x2	2.00
BRAUNITE, Brazil. Xld. in ore. 2x1 3/4	2.00
ENDLICHITE, Hillsboro, N. M. Xld. with Calcite xls. on rock. 4x3 2x1 1/2	3.00
HEMIMORPHITE (CALAMINE), Cumberland. Deep blue crust on rock.	2.00
MOLYBDENITE, Wakefield, Quebec. Crudely xld. mass. 3x2x1 1/2	2.50
PYRITE, Elba. Bright xld. mass. 5x3x2. (3 lbs.)	12.50
BAYLDONITE, Tsumeb. Pseudomorph after xld. MIMETITE. 2x1 1/2	3.50
AZURITE, Bisbee. Xld. crust on stalactitic MALACHITE. 4x2 1/2	7.50
WILLEMITE, var. TROOSTITE, Franklin. Group of xls. 2x2	3.00
GOLD, California. Xld. leaf, very fine. 1 1/2x1 1/2". 4.4 grams.	20.00

**HUGH A. FORD**

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No lists furnished, but inquiries for specific minerals welcomed.

Science  
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# ROCKS and MINERALS

PUBLISHED  
BI-MONTHLY



Edited and Published by  
PETER ZODAC

JANUARY-FEBRUARY  
1952

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## CHIPS FROM THE QUARRY

### LABEL YOUR SPECIMENS!

When sending minerals to other collectors be sure that a label is wrapped with each specimen. These labels should give the mineral's name and its locality.

During the past few years we received quite a number of minerals from subscribers and readers, but many minerals had not even one label. The sender, however, would often send us a long letter writing that the agate came from such and such a place, the jasper from another, the opal from still another, the petrified wood also from another, etc. When the minerals arrived and were unpacked, there would be no agate, no jasper, no opal and often not even a petrified wood. We would place these minerals on a table before us and try to figure out which specimen was supposed to be agate, or jasper, or opal, or petrified wood. Sometimes there would be two opals, or two petrified woods, when only one was sent.

On a number of occasions we would receive two specimens, each from a different locality (no label) and the sender

would differentiate between them by writing that the "colored mineral came from such and such a quarry and the other from such and such a mine". When the minerals arrived, one might be red and the other yellow. Which is the colored one?

It is not the name of the mineral that bothers us—it is its locality? We can identify the mineral but how can we tell where it comes from? It is the locality that counts!

How much easier it could be if a label was wrapped with each specimen. Call the mineral what you want, but give us its locality! Some collectors attach a sticker to each mineral, giving each specimen a number, as 1, 2, 3, 4, etc. Then in their letters they may write—No. 1 is agate, No. 2 is jasper, No. 3 is opal, No. 4 is petrified wood, etc., giving the locality for each.

No matter what system you use, is O.K. with us as long as we can know definitely the locality for each mineral sent.

### N. H. Seward Dies

Wilfred C. Eyles, of Yermo, Calif., sent us word of the passing of Australia's noted opal dealer N. H. Seward, "Highlands", 6 Adeney Ave, Kew, Melbourne, Australia. Part of the letter sent him by Mrs. Seward, dated Dec. 13, 1951, reads:

"I am very sorry, however, to have to advise you that Mr. Seward passed on, after a short time in the hospital, at the end of October.

"We have been carrying on the business here but will shortly be handing over to a change of ownership."

### ATTENTION SUBSCRIBERS

When you send in a change of address, please let us have your old address also. It helps us in locating your name in our files.

### Show a Success!

Editor:—

I wish to thank you for all the publicity you have given our show in your magazine. The show was a success.

Kenneth W. Tharp,  
Show Chairman,  
Whittier Gem & Mineral Soc.  
Whittier, Calif.

Nov. 2, 1951

### Lands Big Swordfish!

Editor R&M:—

On Sept. 1st, 1951, while fishing near Catalina Islands, on the boat "Happy Landing", I hooked and landed a Marlin swordfish, 156 $\frac{1}{2}$  lbs., on light tackle, landed in 42 min. and registered at Balboa Angling Club.

It may be of interest as many of my rock hound friends are fishermen.

Sol Shalevitz  
(Shales's Minerals)  
Los Angeles, Calif.

Sept. 8, 1951

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1952

## TOURING RHODE ISLAND

By **PETER ZODAC**

Editor, Rocks and Minerals

"Little Rhody", as Rhode Island is popularly known, being the smallest state in the Union, is quite a famous "locality" for minerals. During the past few years the state's minerals received little if any attention in print, but such localities as Diamond Hill, Cumberland Hill, Dexter Quarry, and Fenners Ledge are widely known. For a number of years I had been longing to visit Rhode Island and to see for myself some of its many localities but an opportunity never seemed to present itself. Finally Donald Wrathall, of Providence, came to my assistance but it took 3 years for the visit to materialize. In 1949 I was too swamped with work to get away when Mr. Wrathall could show me around; in 1950 a long attack of hayfever forced me to cancel the trip after hotel reservations, etc., had been made; but last year I managed to get away.

Fri., July 20, 1951

(1st day of trip)

I left Peekskill, N. Y., Fri. July 20, 1951, on the 10:19 a.m. train for New York City (Grand Central Station) and in the same station I got the 12:00 noon train (the Bostonian) on the New York, New Haven and Hartford Railroad. This railroad is electrified to New Haven, Conn., steam is used the rest of the way to Boston. The railroad, soon after leaving New York State, follows closely the northern bank of Long Island Sound up to Westerly, R. I. Here and there nice views of the Sound may be had from the car window. Between Old Saybrook and New London (both in Connecticut) we passed a beautiful large sand beach and one or two small ones (all on the right and close to the railroad). These beaches were just crowded with swim-

mers, it being a hot day. New London, the home of the Coast Guard Academy and an important submarine base, is a most interesting city—at least its large waterfront just fascinated me. A sign at a small dock at the station read—"Boat for Block Island". This dock was in plain view but no boat was there.

Stonington, Conn., (on the Sound) was another stop. This is a little city, close to the R. I. border, and is noted among local collectors for its enormous mass of quartz (Lantern Hill, N. Stonington) in which nice quartz crystals are found. I have never visited the locality and so I strained my eyes hoping to spot the hill, as it is a conspicuous one. Unfortunately I could not spot it. Later I learned it was about 5 miles inland from Stonington.

Westerly, R. I., a little city on the Connecticut line, is noted for its many granite quarries, some of which can be seen from the R.R. (all seen appeared to be abandoned or closed down). At Westerly, the R.R. swings to the left, away from the Sound, and goes diagonally across the State to Providence. At Kingston, the home of the University of Rhode Island, I saw at the station a bus on railroad tracks — this railroad bus goes to Narragansett Pier, a summer resort on the Atlantic Ocean.

An incident of the trip, which I noticed for the first time, was to see the conductor announce over a loudspeaker the station stops. At the head of the coach, near the water cooler, he would take out a "telephone" receiver, and announce the stations. The call was loud and clear.

It was 3:35 p.m. when I got off in Providence and a few seconds later found me in a taxi. "Sheraton-Biltmore", was

my instructions to the driver. He hesitated a moment as if to say something and then started off. A half-minute later he stopped—at my destination. To my astonishment the hotel was "across the street".

The Sheraton-Biltmore is a very nice hotel—best in the city. I had room 822 reserved for me and my stay there was most enjoyable. I asked the clerk (a young woman) if there would be any objections to wearing old clothes, mentioning that I would be collecting minerals at mines, quarries, etc. Her reply was—"Wear anything you like. We want your visit here to be pleasant and enjoyable". Next day, as I was leaving the hotel on the first collecting trip, I stopped a bell hop to inquire if I would have any trouble getting back that night, calling his attention to my clothes, (slacks and polo shirt). "Mister," he said to me, "you should see what some of the guests wear when it is real hot. Why you are all dressed up compared with them!"

From the hotel a very good view is available of the State House (Capitol) which is not too far away. As it was still early in the day, I visited the State House, walking all the way. It is a beautiful building, inside and out, and built of white marble. I had hopes of seeing some minerals on display but there were none. To ease my disappointment over not seeing minerals, one of the guards took me on a tour of inspection through the building.

At 6:30 p.m., Mr. Wrathall called for me and we left immediately for his home—47 Common Street—where I met his mother and also had the privilege of examining his minerals; his R. I. minerals especially intrigued me and to my great delight he gave me some choice specimens from his duplicates. And his mother, Mrs. Wrathall, is such a lovely person that I felt right at home among them. They are two very nice people and my visit was a most enjoyable one. It was 10:30 p.m. when I left the house.

Sat. July 21, 1951  
(2nd day of trip)

One of the highlights of today's trip was the presence of Prof. Alonzo Quinn, of Brown University. Mr. Wrathall had arranged to have him accompany us, or to be more accurate, we were to accompany him on a mineralogical jaunt through the State. I have known Prof. Quinn for a number of years but was never out with him. He is such a nice person that a mineral trip in his company is a most delightful one, which I was soon to find out.

Mr. Wrathall called for me at 8:00 a.m. and we went in his car for Prof. Quinn who lives near the University. On the way we passed the entrance to the bus tunnel, a vehicular tunnel which is for buses only, so Mr. Wrathall told me. No private car nor truck may use it.

As our trip was to cover the 5 counties of the State, I noted the mileage from the hotel.

37.0 miles — Hotel Sheraton-Biltmore in Providence, R. I.

38.0 miles — Brown University, where we picked up Prof. Quinn at his home. Here I met Mrs. Quinn, a very friendly lady.

43.0 miles — Beginning Washington Bridge, a large concrete structure over Seekonk River. We turned right on R. I. 103, once across the river.

43.5 miles — E. Providence. At this spot the road is close to the east bank of Providence River (a continuation of the Seekonk also an arm of Narragansett Bay) and we stopped to admire the nice view of Providence, the largest city of Rhode Island and its capital. The river here is about a mile wide and is a beautiful stream.

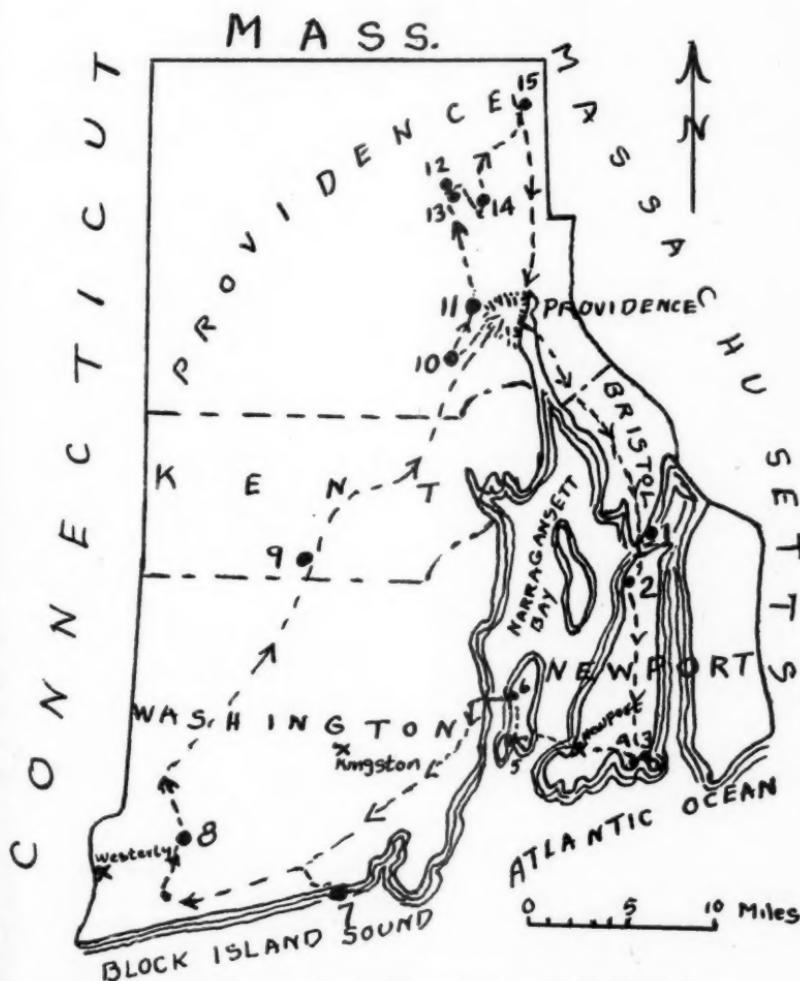
43.8 miles — At this point a big excavation (for a large building?) was being made, about 100 feet to the right of the road and we stopped, not to admire the work but to examine a varved clay deposit that had been exposed in the digging. It was a very interesting occurrence that Prof. Quinn pointed out and we were glad to have stopped. (A varved clay is a clay having annual layers —

coarse and fine—; a coarse varve represents summer deposit while the fine varve represents winter).

50.0 miles — Barrington, a small city, in Bristol County.

52.0 miles — Warren, another small city. Here Prof Quinn pointed out an old Baptist church (right side of road) where Brown University first started, in 1764.

57.0 miles — Bristol, a larger city than



**Map of Rhode Island showing routes taken and ~~local~~ities visited.**

- |   |                            |
|---|----------------------------|
| 1. Bristol Point and Mt. Hope Bridge    | 9. Sand cut near Nooseneck |
| 2. Portsmouth Coal Mine                 | 10. Fenners Ledge          |
| 3. Sachuest Beach                       | 11. Violet Hill            |
| 4. Purgatory                            | 12. Harris Quarry          |
| 5. Mackerel Cove                        | 13. Conklin Quarry         |
| 6. Jamestown Bridge on Conanicut Island | 14. Dexter Quarry          |
| 7. Matunuck Beach                       | 15. Diamond Hill           |
| 8. Sullivan Granite Quarry              |                            |

the previous two and a nice place. Here we were on R. I. 114 (must have hit it in Warren). Bristol is the largest city in Bristol County, the smallest county in the United States.

59.0 miles — We park underneath Mt. Hope Bridge at end of point of Bristol Neck, as in this area is a noted amethyst locality. We followed the north shore line of Mt. Hope Bay, heading eastward. Flesh-colored granite gneiss outcrops along the shore for hundreds of feet. At a spot about 1,000 feet from the bridge, is a nice exposure of a milky and a smoky quartz in the granite gneiss. The quartz vein is 8 ft. wide and from the top of water is 5 ft. high (bank here is 12 ft. high). This is the amethyst locality but search as we would not even a trace of amethyst could we find. I did find an interesting mineral, however, and it was ilmenite which occurred as thin black plates in the smoky quartz, at the very base of the vein. Tiny smoky quartz crystals on massive smoky quartz were also found. On the way back to the bridge, Prof. Quinn spotted greenish chlorite in the granite outcrop. Pegmatite, coarse and flesh colored, was also noted outcropping.

All along the edge of the narrow beach (about 10 ft. wide) pebbles and boulders of rock were very common (gray phyllite most numerous) but no sand. Small pebbles of anthracite coal were also common on the beach but I could not determine if they were native (from nearby coal fields) or castaways from ships.

Where we had parked our car, near a pier of the bridge, the terrain was once good for loose amethyst crystals, so Mr. Wrathall informed me. The pier now rests on the site and so no more amethysts.

We head back toward Bristol in order to get on the bridge.

59.2 miles — Beginning Mt. Hope Bridge, toll 60¢. This is the longest and highest span in New England. It crosses Mt. Hope Bay between the towns of Bristol and Portsmouth. Bristol-Newport County line must be on the bridge but I failed to spot it.

60.6 miles — End of bridge in Ports-

mouth (Newport County) and beginning of the State's largest island (the original Rhode Island).

61.7 miles — We turn right off R. I. 114 at a grade school.

61.8 miles — Off to the right about 1,000 ft. we saw ruins of a building which Prof Quinn told us was the site of an abandoned coal mine (anthracite). We did not stop to investigate.

61.9 miles — Portsmouth R. R. station; small and looks abandoned (on right side of road).

62.0 miles — We park near another abandoned anthracite mine, the Portsmouth Coal Co. mine. Here is an old inclined shaft (top sealed by flat concrete slab) that Prof. Quinn pointed out to us. This shaft went down 2,100 ft. on an incline, he told us.

Here is also a small dump and we collected nice specimens of anthracite and graphite, but a larger and better dump was a few hundred feet further north, along the beach, which was easier to reach by car than walking. We turned around, therefore, and headed for it.

62.0 miles — Parked at shaft.

62.1 miles — We turn left at R. R. station.

63.3 miles — We park at the larger dump at the shoreline. The material all came from the Portsmouth mine. Here we found nice coal and actinolite specimens, in the dump which extends for hundreds of feet along the shore. I also found a large specimen of calcite rhombs (stained brown by iron) which was given to Prof Quinn for the University's museum.

Further north, Mr. Wrathall said, was the site of an old copper smelter; the copper was said to have come from Cuba and Rhode Island coal was used to smelt it. I made no effort to visit the site, a few hundred feet way, as the dump was interesting enough. The dump extended right into the bay (no sand was to be seen anywhere—if present it is covered by the dump). Among the minerals we found at the dump (all coming from the Portsmouth mine) were:

*Amphibole (Actinolite).* Thin green

fibro  
An  
Ca  
also  
Quin  
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Py  
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Rough  
stretch  
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island

fibrous masses in slate.

*Antbracite*. Black lustrous masses.

*Calcite*. Tiny grayish crystals on slate; also the large specimen given to Prof. Quinn.

*Garnet (Almandite)*. Tiny reddish crystals, some gemmy, in black schist.

*Graphite*. Black greasy masses mixed with anthracite.

*Pyrite*. Small mass in black slate with fossil fern.

*Quartz (Smoky)*. Group of small crystals in small white calcite vein in black slate.

*Siderite*. Small brownish rhombs in massive smoky quartz.

*Serpentine. (Asbestus)*. A piece of black slate,  $2\frac{1}{2} \times 3$  inches, has running through it 15 parallel veins of light green serpentine asbestos.

*Fossils*. Prof. Quinn found some very nice fossil ferns in black slate, and we all helped ourselves to it.

The coal mines at Portsmouth (there are two of them) were once worked extensively but were finally abandoned as the coal was too impure (too much ash and graphite mixed with it). According to Ashley<sup>1</sup> "In household and steam use it is found to ignite slowly and with difficulty and to make so hot a fire as to destroy stove tops, melt vessels and boilers placed on it, and destroy furnace linings, so that the fire is difficult to main-

tain and control."

Having filled our bags with interesting specimens we called it quits and headed on our journey.

63.3 miles — Dump at shore.

63.7 miles — Portsmouth R. R. station. We went straight ahead, did not go back to the grade school.

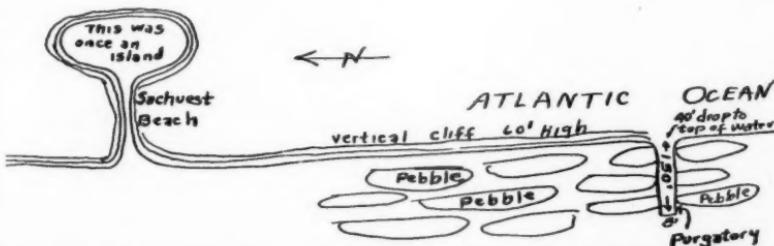
64.2 miles — We turn right on R. I. 114.

65.0 miles — We turn left on black top road. We were now heading for a locality called Purgatory and after making a number of twists and turns we finally reached it.

74.8 miles — Sachuest Beach, on the Atlantic Ocean. We stopped here for two reasons, 1st, so I could collect some beach sand (it turned out to be a fine grained gray sand, mostly colorless quartz with some magnetite), and 2nd, to see a fine example of a tombolo beach (a tombolo beach is a sandbar built by the sea tying an island to the mainland). In this instance the sandbar (Sachuest Beach) connects a former small island to the main island.

About 1,000 feet south from Sachuest Beach in a vertical conglomerate cliff bordering the Atlantic Ocean, is an interesting rock formation known as Purgatory or Purgatory Chasm. It is a vertical cleft about 150 feet long, 8 feet wide and 40 feet deep to the top of the water. The chasm, Prof. Quinn told us, is due to vertical joints (there must have been many of them close together), the water having washed out the material be-

<sup>1</sup>Ashley, George H., *Rhode Island Coal*, U. S. Geol. Survey Bull. 615, p. 58, 1915.



Rough sketch, not to scale, showing Sachuest Beach, the nearby conglomerate cliff with its stretched quartzite pebbles most of which are encrusted with tiny glistening magnetite crystals, and purgatory (an interesting rock formation). Sachuest is a tombolo beach (a tombolo beach is a sandbar built up by the sea tying an island to the mainland).

tween them. The vertical walls showed many large sections of pebbles (due to jointing) in the conglomerate; the sections were smooth (I felt some of them) as if they had been sliced by a huge knife.

The conglomerate cliff is a famous outcrop which has been visited by many geologists. The rock is a stretched conglomerate, its small to large pebbles are all gray quartzite which are not ball-shaped but are flat and elongated as if they had been stretched. The outcrop at the "chasm" is about 500 feet long, 300 feet wide in places, and has a 60 foot vertical drop to the ocean. Tiny magnetite crystals, which glisten in the sun, appear to coat the entire conglomerate. Near the "chasm" is a concrete marker, 2 feet high, standing in the conglomerate outcrop. It had the following inscription on its top:

AGL  
Sept. 3  
1850

Prof. Quinn knew nothing about this marker or monument, this being the first time he had seen it.

As we were leaving the "chasm", we noticed the outcrop at its western edge was a gray sandstone and this reminded Prof. Quinn to tell us that both the sandstone and the conglomerate were of Pennsylvanian age.

75.0 miles — Where we parked near the "chasm".

It was now lunch time and we headed for the Mile Post Restaurant in Middletown, just north of Newport, where we had a very nice meal.

Leaving the restaurant, Mr. Wrathall took us on the famous 10-mile drive around the southeast corner of the island. The drive starts and ends in Newport. The scenery was beautiful and the many handsome estates and stately mansions (for which the drive is famous) were most impressive and enjoyable. Back in Newport we just made the ferry, for Jamestown, being the last car on. Our boat was the Governor Carr, large and roomy, and we had a nice ride to Jamestown, 3 miles to the west and on Con-

anicut Island (fare \$2.00). We passed Goat Island, to our left, a naval base and saw many naval ships in the harbor. On reaching Jamestown, on the southeast coast of Conanicut Island, we stopped for a soda as we were all thirsty.

93.0 miles — Jamestown. We turned left at the ferry landing and followed the east-south-and west shore of the island. Many nice homes were along the shore, in fact the whole left side, (shoreline) seemed to be private property so that we could not stop at a beach.

95.9 miles — Mackerel Cove. This was the first place available for us to stop. It is another tombolo beach and we stopped to inspect it and also so I could collect some beach sand (fine grained dark gray sand consisting chiefly of colorless quartz and light greenish flat plates of schist). Milky quartz and gray schist were common pebbles on the beach. I picked up a schist pebble with a colorless crust of halite on it, but by the time it arrived in Peekskill the crust had disappeared. (The halite crust was due to the evaporation of sea water on the pebble).

We continued on toward Beavertail Point where there is an interesting rock outcrop but when we were almost there, a road block forced us to turn back.

98.5 miles — We turn around near Beavertail Point.

100.8 miles — Mackerel Cove again, we did not stop. We turned left, about 300 feet further, and headed northward for Jamestown Bridge.

104.8 miles — Jamestown Bridge. We parked right at the bridge in order to inspect the shoreline. Fragments of mica schist (garnet bearing) seemed plentiful around the bridge and on reaching the shore, we found the rock outcropping for hundreds of feet. The schist outcrop averaged 6 feet in height and we followed it northward along the shore for about 1,000 feet (it extends much further). The schist is just loaded with garnets — beautiful little crystals, sharp, gemmy and pinkish dodecahedrons, with staurolite. Most of the schist, which contains the finest garnets, is so soft and crumbly that it breaks in the hands and care has to be

taken in collecting it. Other minerals collected were:

*Hematite.* Small reddish masses in schist.

*Limonite.* Small brownish masses in schist.

*Muscovite.* Small crystals with massive smoky quartz.

*Quartz.* Tiny rock crystals in cavities of the schist; most of these crystals are stained brown by limonite. Milky quartz occurs as loose pebbles on the beach. Mr. Wrathall found a large mass of smoky quartz which showed small gemmy parts.

*Staurolite.* Very common as single and twin crystals in the schist, and associated with garnet; unfortunately the crystals do not have sharp faces.

*Sand (Beach).* Dark gray fine to coarse grained sand consisting chiefly of garnet (red, opaque to pink, gemmy); quartz (colorless, brownish to smoky); and mica schist. Some of the schist grains show garnet and staurolite. A little magnetite (black), staurolite (dark gray), hematite (red), and sea shells (white) were also present. One tiny colorless scheelite grain also found (detected by its bluish fluorescence).

Finishing here, we crossed to the mainland, via the bridge.

104.8 miles—East end of Jamestown Bridge on Conanicut Island.

106.3 miles—West end of Jamestown Bridge, on the mainland. Here is a tollhouse — toll 90¢. Newport-Washington County line must be on the bridge but I failed to notice it.

106.6 miles—We turn left on U.S. 1.

114.5 miles—Narragansett Pier. A popular bathing beach (see note on Kingston). We did not stop.

117.5 miles—Wakefield.

121.9 miles—We turn left off U. S. 1 on a black top road.

124.0 miles—Matunuck Beach. A beautiful long beach and another popular bathing resort. We did not stop as we would have some trouble in finding a parking space, would have to pay an admission charge, etc. We continued onward a short distance to a section easier to reach and located near the home of

one of Mr. Wrathall's friends.

124.3 miles—Matunuck Beach (eastern section). The beach here is quite large, nice, free, easy to reach and no one was on it. Our visit was simply so I could collect a little beach sand from the mainland. This beach sand is dark red and fine grained; its color is due to the preponderance of the garnet. Some of the other minerals noted in the sand were quartz (colorless, smoky and white), magnetite (black), and small amounts of epidote (green) and zircon (brownish, gemmy, and fluoresces apricot-brown).

We stopped at the home of Mr. Wrathall's friends for a few minutes where I met a number of nice people whose names escape me, and then we headed back for U. S. 1.

126.7 miles—We turn left on U. S. 1.

137.0 miles—Quonochontaug Beach, off to our left where magnetite sand is found. Sand dunes are there, too, said Prof. Quinn. We continued on as we could not make all stops. Some day I will have to go back to visit the dunes.

137.4 miles—We turn right off U. S. 1 on a black top road.

140.8 miles—We turn left (Sullivan Granite Co. sign here).

141.2 miles—Sullivan Granite Co. quarry in Bradford, Washington Co. This was a large working quarry but no one was around (being late Saturday afternoon) and we had the place to ourselves. Prof. Quinn was acquainted with the place and showed us around. The working plant where the granite slabs are sawed was most interesting but so was the quarry itself, a vertical pit 100 feet deep, 300 feet long and 150 feet wide. The rock of the quarry is a gray, fine grained granite. One or more small pinkish pegmatite dikes are present in the quarry and this rock, when quarried, is apparently thrown away. We collected a number of specimens, some of which came from the pegmatite. These minerals are:

*Biotite.* Small black plates in pinkish pegmatite.

*Calcite.* Gray crusts on granite. This crust is interesting only because it fluo-

resces red under the Mineralight.

*Epidote.* Small greenish crystal masses in granite.

*Epistilbite.* Pinkish radiating crystals on granite.

*Fluorite.* Small purple crystal masses in granite.

*Magnetite.* Small black masses in granite.

*Microcline.* Flesh colored masses in pegmatite.

*Muscovite.* Lustrous silvery flakes on granite.

*Oligoclase.* White striated masses in pegmatite.

*Quartz (Smoky).* Constituent of pegmatite.

*Granite.* A small but nice specimen with one face polished. It is gray in color and fine grained.

This terminated our day's collecting and we headed northeasterly for Providence. After a series of twists and turns we reached R. I. 3 on which we turned right.

145.9 miles—We turn right on R. I. 3.

148.0 miles—Hopkinton.

152.8 miles—Hope Valley.

161.5 miles—R. I. 102 crosses R. I. 3.

162.0 miles—Kent County line on R. I. 3.

163.6 miles—Noosenec.

164.6 miles—Here we saw a small exposure of pinkish granite (Sterling granite gneiss—Prof. Quinn) bordering the left side of the road (R. I. 3). The outcrop was about 100 feet long and 15 feet high. We stopped to examine it, and found small black plates of ilmenite associated with small smoky quartz crystals in the pinkish granite.

171.0 miles—Tiogue Lake (nice body of water) to right of road.

179.0 miles—State Prison (gray building) off to right. Here we can also see, straight ahead, the tallest building in Providence—Industrial Trust Building.

180.0 miles—Cranston coal mine (adjacent to R. I. 3 on right). The mine is in operation and the coal mined for foundry graphite. It has an inclined shaft down about 1,000 feet; coal bed 20 feet

thick. All fenced in and gate locked, so we could not get in.

A few hundred feet further we turned left (off R. I. 3) to avoid city traffic. 183.0 miles—Cranston.

183.5 miles—Fenners Ledge, a noted locality, is up hill to left. We visit it tomorrow.

186.7 miles—R. R. station and my hotel in Providence. I went on to Prof. Quinn's house, where I again had the pleasure of meeting Mrs. Quinn and in addition, their two nice daughters. Then Mr. Wrathall took me back to the hotel. A beautiful day and a most interesting trip.

Mileage for the day—152

Sun. July 22, 1951

(3rd day of trip)

Today Mr. Wrathall and I would be on our own as Prof. Quinn could not be with us. Mr. Wrathall, however, knows many of the State's localities and so we had another interesting day. We missed Prof. Quinn's presence and those interesting talks which he gave so freely. All localities visited are in Providence County.

Mr. Wrathall called for me at 9:00 a.m.

5.9 miles—Hotel Sheraton-Biltmore, Providence.

7.0 miles—R. I. State Armory; a large and beautiful building on Cranston Ave.

8.4 miles—We turn right in Cranston, off Cranston Ave., on Gladstone Street and go up hill, heading for Fenners Ledge in which there was an old coal mine. Mr. Wrathall had not been to the locality for a number of years and in the meantime the area had been so built up that he could not spot the locality and so we cruised around looking for signs. Finally we thought of a chance remark by Prof Quinn (the day before), something about a new schoolhouse being built near the locality, and we decided to investigate the site. We had gone right past the schoolhouse—it was in plain view near Gladstone Street—but we had paid no attention to it then. So we turned around and headed

for the site and it was a good move. Just as we reached the school, I noticed an old lady on the front lawn of a nearby house and I went to her to enquire about Fenners Ledge and she proved to be a source of much interesting information. She told me that the new school building was on Fenners Ledge, that the old coal mine had been obliterated (all covered over by the grading for the new school), in fact the school building was actually on the coal mine. An old tunnel (or shaft) was near her home but she doubted if it was now visible; my investigations of the wooded and brush covered hill-side terrain could not locate it and thus the grading must have covered it up too. A watchman soon appeared on the school site and he more or less corroborated the woman's story.

We then started to examine the terrain of the school site — the Gladstone Street Elementary School was going to be a huge building when finished as it covered lots of ground. Considerable slate (graphitic) was seen outcropping on the site, exposed especially in the trenches dug for foundations, and from the trenches we collected a number of interesting minerals. These specimens were:

**Amphibole (Actinolite).** Thin green fibrous masses in graphitic slate. Our best specimens were slickensided, being associated with slickensided graphitic slate.

**Graphite:** Common as thin black greasy masses, flakes and films in the slate. You couldn't pick up a single piece of slate, it seemed, without getting your fingers smudged from the greasy graphite. We didn't see any coal (anthracite) in any of the trenches examined.

**Hematite:** Bright red earthy masses in slate.

**Limonite:** Yellow crust on slate.

**Opal (Hyalite):** Thin white crust on slate.

**Fossil (Calamite):** A nice section of a calamite, 4 inches long and 1 inch in diameter (of dark gray slate) was also found. This so resembles wood that I thought at first it was petrified wood when first spotted.

Fenners Ledge is especially famous for fibrous quartz replacing aphrosiderite which once occurred here in large veins. We did not see the veins so apparently the school construction has covered them. Once the school building is finished, and the terrain seeded, Fenners Ledge at the school site will be a thing of the past.

Leaving the site and heading back for Cranston Ave., when we reached a spot on Gladstone Street just below the school, something in the terrain to the left caused me to ask Mr. Wrathall to stop while I got out to investigate. Just 100 feet to the left of the road I saw a huge but natural depression and overgrown with trees and brush; spotting a path leading down I followed it, first yelling to Mr. Wrathall what I had found and he jumped out quickly to follow me. Our investigations showed that we had reached the north end of Fenners Ledge — here it was about 300 feet wide with a 50 foot vertical drop—all gray graphitic slate. At the left end of this ledge, was a mine opening about 15 feet high and 40 feet wide. We had to climb a few feet to reach this opening, and there was a big pool of water at its entrance with some boards stretched across its narrowest width leading to a sloping shelf. I wanted to climb up to this shelf (only 5 feet above the water) so as to go in further, but the rock was all graphite and so slippery it would be foolish to attempt it — I would go flying into the water. Indeed climbing up to the entrance itself was slippery but fortunately a number of handholes and toeholes were present so that it could be done safely. I estimated the opening went in 50 feet, but then there might be an unseen passage which would go in much further, possibly to the main mine workings. All the rock in and around the mine opening was graphitic slate, black in color and slippery.

Right at the mine entrance, on the right wall, was a small exposure of melanterite, a soft yellow mineral, in a crevice of the rock. Near this opening, I found a large and very nice specimen of actinolite. Good specimen of graphite

were common around this mine opening, but no coal.

Leaving Fenners Ledge, we headed for **Violet Hill** in Providence.

9.9 miles—Gladstone Street School.

10.0 miles—We turn right on Laurel Hill Ave.

10.1 miles—We turn right on Gladstone Street.

10.2 miles — We park near the mine opening, mentioned above.

10.5 miles—We turn left on Cranston Ave.

13.5—**Violet Hill** locality off Manton Ave.

We parked in front of a nice white house (627 Manton Ave.), then we walked about 600 feet up a small lane (to right of the house) till we reached a large outcrop on **Violet Hill**.

The **Violet Hill** locality turned out to be a gray green and dark green serpentine outcrop running as a small ridge on the side of a small hill (**Violet Hill**). Tiny loose magnetite crystals have been found in crevices of this exposure but search as we would not a single one could be found—we had no magnet, just a magnetized blade of my pocket knife. In the nearby road some magnetite grains were spotted and I then tried collecting them. The further down the road we went the greater the amount of magnetite, but collecting with a small magnetized knife blade was slow work and only a small amount of the grains could be collected—you needed a magnet for the work. However I collected enough magnetite in  $\frac{1}{2}$  hour as to fill a small vial.

About 600 feet to the left of the big serpentine outcrop, and on the continuation of the serpentine, is a quarry where many interesting minerals have been found such as clinochlore, dolomite, epidote, hematite, talc, etc. The owner of the quarry, unfortunately, will allow no one on the property and so we could not visit it. The quarry was not visible and the information was given me by Mr. Wrathall.

Leaving **Violet Hill** we then headed northward for **Limerock**, where a num-

ber of limestone quarries would be visited.

13.5 miles—**Violet Hill** locality.

13.6 miles—50 feet vertical rock outcrops in street (left of road) which may be serpentine and if so could be the continuation of the ridge on **Violet Hill**. We did not stop to investigate.

13.7 miles—Brush Hill Road to left.

23.0 miles—Lincoln Downs, a huge race track (left) on R. I. 146.

23.2 miles—Limerock (one end of it, on R. I. 146, according to signs).

23.6 miles — Breckneck Hill Road to right.

25.7 miles—Harris limestone quarry, about 50 feet to right of R. I. 146. The quarry is about 300 feet in diameter and full of water, with walls 30 feet high. The quarry has been abandoned and is fenced in. Because of its being fenced in, we could not enter the quarry proper so I contented myself with collecting a nice specimen of the bluish tinged white limestone that had been dumped at one end. Minerals that had been found here in the past are calcite (nice xls); opal (blue coatings on weathered quartz); flat, tabular quartz xls, tinged with yellow; minute brownish rutile xls in quartz; serpentine (bowenite); and greenish talc.

Somewhere between Lincoln Downs and Harris quarry, a new R. I. 146 had been started which we failed to spot (at any rate it was not opened to traffic); at the time of our trip part of the new stretch of road was opened and it began right at the quarry and extended northward. Because of this new road, and due also to the fact that Mr. Wrathall hadn't been to the area in some years, he became confused as to the location of Dexter quarry, the most famous limestone quarry in Rhode Island. We continued up the new R. I. 146 for a distance and then wandered around the side roads without success, asking directions from individuals here and there — all seemed to know Dexter quarry but not one direction led us to it. Finally in desperation we returned to Harris quarry and then stopped at a nearby house (only one visible) to inquire directions and this

time we received good ones. For one thing, directly across from Harris quarry, on the other road, was the Conklin limestone quarry that was in operation and which we visited. Being Sunday, no one was around and so we had the quarry all to ourselves. We parked our car near the road, at the office and plant, then walked about 700 feet to the quarry which was about 400 feet long, 150 feet wide, with walls 50 feet high. I found but one specimen, a nice 2 x 3 apple-green bowenite on bluish-white limestone, the first and only bowenite I had ever found. As the mineral is more or less a rare one, perhaps a few words on it may be of interest.

#### **Bowenite**

Bowenite is a massive serpentine of a very fine granular texture, and so resembles nephrite that for a long time it was thought to be nephrite. It was first found in Smithfield, R. I., over 100 years ago and was named after G. T. Bowen who analyzed it. It is possible that bowenite was first found in the Dexter limestone quarry, which we would visit next. As this was the first time I had ever found bowenite, I was well pleased with my visit to the Conklin quarry.

We continued up the road to its end, turned right, and just to make sure about directions, I stopped at the corner house to check them with an elderly man seen there. Yes, we were on the right road and were told to go straight ahead and to turn left on the 3rd road (and this went up a hill). He told me that there was another old limestone quarry in the area called the Junty (?) and it was on the old turnpike (I had told him of our visits to the Harris and Conklin).

33.1 miles—Harris and Conklin quarries.

33.8 miles—Turn right at end of road.

33.9 miles—Limerock General Store (left) in the small village of Limerock.

35.3 miles—Turn left on the 3rd road; road goes up hill and is called the Dexter Rock Road.

36.1 miles—Dexter quarry, about 25 feet to right of road.

My first view of Dexter quarry shocked

and sickened me. For this famous old limestone quarry, one of Rhode Island's most famous localities, was being used as a garbage dump and what a mess it was! I estimated the quarry to be 1,000 feet long, 500 feet wide, with walls 25 feet above the top of water (Mr. Wrathall told me the water was 60 feet deep). The garbage dumping must have been going on for years and is still being done, the water carrying the material to the far end, at any rate it was so covered with cans, boxes, paper, trash, etc., etc., that only a small spot about 50 feet in diameter, near the shore, showed water—the rest was a "sea of garbage". It was the most nauseating sight I ever saw and it seemed to me that it should be a health hazard, even though the quarry is in an isolated area. It was useless to look in the quarry for minerals, but across the road was the ruins of the old lime plant and here I found a large mass of white talc from which a nice 3 x 4 inch specimen was broken off. Then we hurried on, to get away from the place.

Dexter quarry is an old working. It is located near the village of Limerock in Lincoln Township. One hundred years ago there may have been no Lincoln Township and so the quarry was in Smithfield, whose eastern boundary is now a few miles to the west for in Dana's "System of Mineralogy", 6th edition, reference is made on page 241 that octahedrite was found at the Dexter lime rock, Smithfield, R. I. If this is so, then bowenite may have been first found in the Dexter quarry. At any rate Dexter quarry is now in Lincoln Township.

Among the minerals that have been found in the Dexter quarry are:

*Amphibole (Tremolite).* Gray masses.

*Calcite.* Beautifully xled and of a yellowish shade.

*Dolomite.* Fine specimens, xled, and of a brown color.

*Nacrite.* Xled in cavities of quartz.

*Pyrite.* Small xls and xline in limestone.

*Quartz.* Many beautiful xls (rock xls or xls showing a yellow color) and transparent flattened xls, distorted xls, etc.

*Talc.* Beautiful greenish foliated masses; nice white masses.

36.1 miles—Dexter Quarry. We continue on the road.

36.7 miles—Turn left at "T".

36.7 miles — Harris Bros, sand and gravel bank to left and adjacent to road. We did not stop.

38.3 miles — Ashton. We take road here whose sign reads "Diamond Hill 6 M.

40.4 miles—turn left on R. I. 114.

42.2—Road left to Cumberland Hill.

43.9 miles—Diamond Hill.

Diamond Hill turned out to be a huge vertical bare cliff of gray quartz (stained brown and red by iron). The cliff (200 feet to right of road) was deeply pitted by joints and crevices lined with drusy quartz. From where we parked at the base of the cliff, I estimated the cliff to be 1,000 feet long and from 125 to 200 feet high.

Here we found a group of collectors whose parked cars bore Massachusetts plates. We soon learned that it was the Worcester Mineral Club on a field trip to the locality; Howard Ackerman, President, in charge. The collectors clung to the steep sides of the cliff like flies, and they were getting some nice specimens, mostly quartz xls. We soon joined the collectors on the cliff and we, too, got some nice quartz specimens, among them were tiny rock xls.

Diamond Hill is another famous Rhode Island locality. Among some of the minerals found here are barite, goethite as botryoidal dark brown drusy masses on quartz; hematite, dark red crusts and red stains on quartz; limonite, brown stains on quartz; quartz (as agate, amethyst, chalcedony, chrysoprase, jasper, milky, rock xl, and massive); and zoisite. J. W. Baker, in writing about Diamond Hill in the May, 1906, issue of "THE MINERAL COLLECTOR", p. 33, said:

"Diamond Hill is known far and near for the beautiful specimens of quartz and agate that have been found. This is an abrupt precipitous mountain of quartz rock, agatized in some places and intermixed with fragments of jasper and other

accidental minerals, such as druses of quartz crystals, phosphate of lime and veins of red hematite.

"The iron ore occurs on the southern slope of the hill, about half way from its base to the summit. The veins are about six inches wide, and the cavities often contain beautiful botryoidal and stalactical groups of the ore, forming interesting specimens; but there is not a sufficient supply of it for the manufacture of iron.

"This hill is much visited by mineralogists for the sake of the beautiful specimens of agate and quartz which abound there. The former constitutes the principal mass of the hill, and is especially beautiful at the summit, where it can be easily broken from the huge detached masses of rock."

Unfortunately I did not have Baker's notes with me at the time of our visit to the locality; it was also late in the day when we arrived and so did not have too much time to spend. When we visit Diamond Hill again, we will give the cliff a good going-over.

Diamond Hill is very conspicuous, as it towers above the surrounding flat area —to the north, west and south. Directly in back of Diamond Hill but separated by a small depression is Beacon Pole Hill, so Mr. Wrathall told me. About  $\frac{1}{2}$  mile west of Diamond Hill is Calumet Hill on which is found amphibole (hornblende) as slender black xls imbedded in smoky quartz, so Prof. Quinn informed me.

This finished my collecting not only for the day but for the trip, as tomorrow I would be leaving for home. The Worcester Club was also leaving, and so with many handshakes, we finally parted, they heading northerly for Worcester, Mass., and we southerly for Providence.

43.9 miles—Diamond Hill, R. I.

51.9 miles—Eddie's Grill, in Central Falls. Stopped to eat here and it was a very nice place. I forgot to mention that another good reason for not giving Diamond Hill a good work out is that we were both *starved*, and so we were "weak" from hunger. We couldn't find

an eating place anywhere along the way and were we hungry! There used to be a very good place at Diamond Hill, so Mr. Wrathall told me, but when we arrived the place was no longer in existence—it had disappeared. We had a very good meal at Eddie's, after which we took our time heading for the big city.

53.5 miles—Pawtucket.

56.0 miles — North Burial Ground (North Main Street in Providence). We stopped here for a few minutes so I could see a very popular boulder. It was in the cemetery, near the corner of Main and Ridgeside Ave., 5 x 5 x 3 foot blackish mass that for a long time had been pointed out to visitors as a meteorite. It was identified by Prof. Quinn as a cumberlandite, so Mr. Wrathall told me. (Cumberlandite is an igneous rock that outcrops on Cumberland Hill in Rhode Island).

About 100 feet east of the "meteorite" is the grave of Canonicus, the Indian who signed the treaty with Rogers Williams. The stone marking his grave is a dark gray rounded boulder (native boulder, no doubt).

58.6 miles—Mr. Wrathall's home in Providence. I stopped in for a few minutes to say good-bye to his mother.

59.4 miles—Hotel Sheraton-Biltmore. It was with much regret that I had to say goodbye to Mr. Wrathall. He outdid himself in his desire to have me see Rhode Island and to collect some of its many minerals. I owe him many thanks.

Mileage for the day — 53.5

Total for the 2 days — 205.5

Mon. July 23, 1951.

(4th and last day of trip)

I had promised to pay Prof. Quinn a visit at the college and to inspect the minerals that were on display in their museum. This time, being on my own, I took a bus that would take me through the city's famous bus tunnel. This tunnel, which I estimated roughly to be about 2,000 feet long, is for buses only. One end is not far from the hotel, and the other end is about a block from the college. Fare 10¢.

The museum was easily found and so was Prof. Quinn, who was awaiting me. Here I spent a most enjoyable 2 or 3 hours examining the many minerals on display and in taking notes; some of the minerals were extremely beautiful, others intensely interesting — the many Rhode Island minerals fascinated me. It was with regret that I had to leave, at 11:30 a.m.

I got the tunnel bus again; checked out of the hotel 12:10 p.m. and got the 12:55 p.m. train for New York City, where I arrived 4:40 p.m. Here I got the 4:56 train for Peekskill and home.

#### An Appreciation

To Mr. Wrathall and Prof. Quinn, I am deeply indebted for a most enjoyable visit to their "big" State. Not only did they arrange to have the weather ideal, the scenery beautiful, and the localities numerous with many fine minerals, but they saw to it that I collected in every county of the State. I had a most delightful trip and my grateful thanks are extended to these two fine gentlemen. I am also indebted to Prof. Quinn for helpful suggestions in the preparation of this paper.

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Paul J. Fournier  
Berlin, N. H.

Dec. 26, 1951

## AN AMATEUR MINERALOGIST VISITS BERMUDA

By MRS. SARAH H. SHERLOCK

34 Parkway West, Halcyon Park, Bloomfield, N. J.

Nearly everyone who has visited Bermuda returns with an enthusiastic account of its many beauties. Some get most satisfaction delving into its historical background. The botanist studies its most unusual flowers. The artist paints its brightly colored homes, foliage and water. Others like its friendly people and its sunshine. To me, the outstanding experience of my recent trip was a visit to the Government Quarry.

Before going, Mr. Zodac, editor of ROCKS AND MINERALS, had suggested that I contact Mr. C. M. Allen, of Pembroke Parish, who had written a most interesting article on Bermuda entitled, "Bermuda, A Product of The Ice Age." (ROCKS AND MINERALS, Nov. 1940) Much to my disappointment, Mr. Allen was in The States, so I was strictly on my own.

On our first tour of the cave section in Hamilton Parish, my daughter and I visited Leamington and Crystal Caves, both open to the public: Leamington Cave is above sea level, its clear pools of turquoise water rise and fall with the tide. The temperature was extremely warm, the stalactite and stalagmite formations were beautiful. Some stalactites were as much as 14 feet long,  $\frac{1}{4}$  inch in diameter and hollow. However, they were only to be seen and not handled.

That evening we were fortunate to meet at the club where we were staying Mr. Percy Hunt, long a resident of Smith's Parish. He suggested we first see Mr. H. Colin Smith, Director of Public Works. This we did the next morning, and were given a permit to visit the Government Quarry. It is located on Castle Harbour, not far from the Leamington Cave. We had learned that the manager was a Mr. Hughes, and had little difficulty in finding him and introducing ourselves. He gave us the go ahead signal, even furnishing us with

the necessary hammer. We were told that blasting was being prepared and to avoid exploring in that vicinity. Nevertheless, with the help of a Portuguese truck driver, we located the entrance to one of the many caves that are constantly exposed in the quarrying of the Eolian limestone, which is used for building purposes. Here we found all sorts of calcite and aragonite specimens, many of them crystalline in formation. Some appeared to have excellent polishing possibilities. There were any number of stalactites and stalagmites, the larger ones two inches in diameter. We eagerly gathered the best, filling our basket with many varieties, about 14 lbs. Later we found that most of the specimens not only fluoresced a pale yellow green under the Mineralite, but phosphoresced as well.

Our Portuguese friend, either because he felt responsible for our safety, or wanted to help us, called three of his husky laborers to remove several large rocks from the entrance of a cave. This made it possible for my daughter to crawl into the cave with her camera and take flash pictures.

On other trips about the Islands we obtained several varieties of coral and shells and also brought back some of the pink and white sand found on the south shore beaches. Some of the shells were lined with fluorescent calcite crystals.

To one who has visited quarries, mines and dumps of all kinds in this country, the visit to the Government Quarry in Bermuda was an amateur mineralogist's delight. Few people, apparently, had been there before on a similar trip. We were not looked upon with suspicion. We were given every assistance and extended the utmost courtesy by those in charge. Even the Custom's official at the airport didn't inquire as to what was in our basket. Best of all, we found enough material to more than satisfy any collector.

## DANA'S "SYSTEM OF MINERALOGY," SEVENTH EDITION, VOLUME II

Dana's "System of Mineralogy," Seventh Edition, Volume II, Halides, Nitrates, Borates, Carbonates, Sulfates, Phosphates, Arsenates, Tungstates, Molybdates, etc., by Charles Palache, the late Harry Berman and Clifford Frondel, Harvard University. xi — 1124 pages. John Wiley and Sons, Inc., New York, N. Y. (1951). Price \$15.00.

Over seven years ago the writer had the pleasure of writing a history and review of Dana's "System of Mineralogy" for ROCKS AND MINERALS on the occasion of the appearance of the first volume of the seventh edition of the "System". It is appropriate to quote here in full the last paragraph of the review:

"Dana's 'System of Mineralogy' has long been the 'Bible' of mineralogists all over the world. There is no doubt that the seventh edition will hold the same important position as its predecessors. It continues the traditions of care, thoroughness and progress which have kept the 'System' preeminent for a century. All serious students of minerals will want to have the new 'System' at hand constantly. Every public library and college should have a set. It is to be hoped that the misfortunes of war and the tragic death of Dr. Berman will not long delay the appearance of the remaining volumes".

To be sure the appearance of the second volume has been longer delayed than one might have expected but it has been well worth waiting for. All the fine features of the first volume have been continued and to browse through it is a perfect delight to the mineralogist. A wealth of critically evaluated information is set forth with meticulous care and in most convenient form.

The number of pages of the second volume exceeds by 290 that of the first, but the first had an introduction of 85 pages which serves for all volumes. The length of the descriptive text is 1107 pages in the second volume compared to 742 in the first volume. With this increase of nearly 50% the price per page of descriptive text is only a trifle more than that for the first volume. In view of the general rise in book prices since 1944 this is most gratifying.

In the indexes of both volumes the

names of recognized species are emphasized in bold type. They are interspersed among the much more numerous synonyms and varietal names. A rough count gives this result for the two volumes.

I                    II

### Species listed

in index	about 375	about 660
Total entries		
in index	about 1925	about 1900

### Ratio of species

to total	about 0.195	about 0.345.
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It will be seen that in the groups of minerals treated in the second volume, the halides and oxygen salts, the excess of synonyms and varietal names is not nearly as great as it is among the elements, sulfides and oxides treated in the earlier volume. The number of pages per valid species in the present volume averages 1.68 against 1.98 in the first volume. This slight decrease is probably connected with the relations just referred to. However, 20 pages are devoted to the description of calcite, more than any mineral included in Volume I. The description of apatite occupies 11 pages, those of azurite and of gypsum 5 pages each.

A great deal of previously unpublished information is included in this new volume as there was in the first. For many minerals good density determinations, cell dimensions, or other data are given for the first time. Creedite is one of the minerals for which essential new data are recorded. A creedite locality, Colquiri, Bolivia, not hitherto given in the English literature on this mineral as far as the writer knows, is mentioned. Yet another locality is reported in the note following this review.

In many cases the unified treatment of mineral species or the reconciliation of morphological and structural crystallographic data has been carried out for the first time in this volume. In a few

cases this has involved the redescription of long familiar species. Minerals of the barite group are now referred to axes chosen in accord with the results of X-ray study. This requires the reindexing of many of the forms of these minerals. The prismatic cleavage of these minerals, formerly designated as (110), is now designated as (210). The change may be considered illustrative of the Donnay-Harker law of crystal morphology. In the case of gypsum a new setting has been adopted which is determined by the smallest possible lengths for the edges of the unit cell. This requires the redrawing of gypsum pictures and these may seem strange to those familiar with gypsum as shown in the old "Dana" orientation. Fortunately the change is a fairly simple one. The *c* axis is kept the same and the crystal just turned front to back on this axis. In the footnotes the transformation between the two settings is given. It is regrettable that no mention is made of the numerous other settings, at least four, that have been used for gypsum. A statement of the transformation between all of these settings would have been most welcome.

While we find a great deal of fascinating information in the new volume it is also rich in the suggestions it offers for further mineralogical study and this is possibly its greatest value. Many well established species have not received adequate crystallographic study. One such is the mineral loeweite,  $\text{Na}_2\text{Mg}_2(\text{SO}_4)_4 \cdot 5\text{H}_2\text{O}$ . The artificial counterpart of this can be crystallized from aqueous solution and should furnish suitable material for crystallographic study. The incompletely described mineral llallaguaite is not referred to in the present volume. It seems to this reviewer that it might correspond to rhabdophane,  $(\text{Ce}, \text{Y}, \text{La}, \text{Di})\text{PO}_4 \cdot \text{H}_2\text{O}$ , also incompletely described, and that both may be the natural counterparts of the hexagonal cerium phosphate recently described by Professor Rose C. L. Mooney (*Acta Cryst.* 3, 337-340, 1950).

The writer would have preferred to see the type of minerals designated in the book as "alumino-fluorides" called fluo-

aluminates and to have had the mineral cryolithionite included among these, especially inasmuch as its formula is written in conformity with those of Type A of the "alumino-fluorides". This would have been in accord with the classification used. For numerous minerals several alternative space groups are listed. This is the consequence of the ambiguity which often remains in the determination of the space-group by X-ray diffraction. It is roughly comparable to the uncertainty in the assignment of crystal class from morphology. However, once an acceptable crystal structure has been found this ambiguity of space group disappears. It seems to this writer that the space group should then be considered to be that into which the structure falls. For instance, under sulfohalite one finds the statement "Space group uncertain, probably  $\text{Fm}3m$  or  $\text{F}43$ ." The structure found independently by both Professor T. Watanabe and the writer is in the former space group. A footnote refers to "morphological evidence of tetrahedral symmetry" which would be in contradiction to either of the space groups mentioned. Unfortunately the picture of the structure published elsewhere (*Strukturbericht* III, 119) is incorrect and does not give appropriate indication of the space group.

Criticisms such as these are, of course, of a highly technical nature and will arise only in the minds of those who are intimately concerned with the problematical aspects of mineralogy. They will vanish only when the science of mineralogy is complete and has become a discipline. That day is not in sight. In the meantime the "System" will continue to be both the guide and inspiration that it has been for a long time. We look forward eagerly to the completion of the seventh edition with the appearance of the third volume which will contain not only the description of the silica minerals and the silicates as mentioned in the review of the first volume, but will presumably also cover that small class of minerals, the hydrocarbons (example, the well known fluorescent mineral curtisite), not included in the published volumes.

A. PABST

## A NEW LOCALITY FOR CREEDITE

By A. PABST  
University of California, Berkeley 4, California

In January, 1951, the writer obtained from Mr. Richard Thomssen some specimens from Darwin, Inyo County, California, containing excellent crystals of the rare minerals creedite,  $\text{Ca}_3\text{Al}_2\text{F}_4(\text{OH},\text{F})_6(\text{SO}_4)_2\text{H}_2\text{O}$ , hitherto reported from but three localities. The specimens were detached from a block brought to the surface by mining operations. Though the writer obtained additional material through the kindness of Mr. Lee Stoiser it has not been possible to make observations on the occurrence of creedite in place.

The creedite from Darwin occurs with pyrite, galena, fluorite and a cryptocrystalline mixture, partly carbonates and clay minerals. Pyrite is the most conspicuous constituent of the specimens. It occurs in fresh, striated cubes up to half an inch on edge, many showing a complex vicinal development. These, together with a minor amount of galena, are coated with or embedded in the mixture of cryptocrystalline minerals in which some microscopic octahedrons of low refractive index, presumably fluorite, were detected. In many places the pyrite is easily removed and leaves perfectly clean molds in the matrix. Here and there in the

matrix patches of fluorite, some colorless, some purple, can be seen with the unaided eye.

In this environment creedite occurs as embedded clusters or, mostly, as the lining of small vugs. In the cleaner portions it is found in perfectly clear, colorless, prismatic crystals, several millimeters in length. The habit differs slightly from that shown on page 129 of the second volume of the seventh edition of Dana's "System of Mineralogy". The principal forms are invariably the unit prism (110) and the *c* pinacoid (001). Other forms are represented by small faces only or are entirely lacking.

The crystals were checked by goniometric measurement after optical examination and density (2.72) had indicated the probable identity. Satisfactory agreement of calculated and observed angles was obtained. X-ray study of a single crystal by rotation and Weissenberg patterns led to cell dimensions and space group now found to be in agreement with data of Wolfe and Frondel newly published in the second volume of the seventh edition of Dana's "System of Mineralogy."

## FOUR LOCALITIES FOR RHODOLITE

More than three years ago I obtained from ROCKS AND MINERALS the name of a collector, P. D. Boerner, Alice Springs, N. T., Australia. He gave me some help preparing the articles on Australian Garnets that were published in the Jan.-Feb. and Mar.-April, 1950 ROCKS AND MINERALS. Several days ago I received a package from him containing 12 garnets from the Alice Springs district several of which are quite interesting. One in particular is Rhodolite which comes from Billy Hughes Mica Mine, Mt. Palmer, Harts Ranges, northeast of Alice Springs, Northern Territory, Australia. The garnets are small but have a beautiful lilac

or purple color.

So far as I know this is the fourth occurrence on record for Rhodolite. The original was North Carolina, later it was found in Greenland, then in Ceylon. If I had a specimen from Ceylon, I would have them all.

While I am not as active in collecting as I used to be, I have added about 60 garnet specimens in the past two years. I frequently get letters from strangers which appear to be inspired by my articles on garnets in ROCKS AND MINERALS. This always surprises but, of course, pleases me.

JOHN N. TRAINER  
Brewster, N. Y.

## JAROSITE

By ROBERT D. ROOTS

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I was just typing a number of labels for some Nevada Jarosite that I received some time ago, when I happen to think that I had seen very few specimens of Jarosite in mineral collections.

Now Jarosite is not as rare as it used to be but it is still rare enough to merit more attention than it has received. Some of it is hard and others of different hardness down to a powder. Some has a bright micaceous look, others a silky luster and some I am sorry to say looks like plain chalk. In color it will vary from a light red to a dark brown, most of what I have seen is of a light brown.

The first time I heard about Jarosite was when I told the engineer at the Barefoot Mill in Goodsprings, Nevada, that I was going to visit the Boss Mine near there. He told me what Jarosite was and where to look for it and I found it without much trouble. From what I finally learned they had been putting Jarosite over the dump not knowing that it was the richest ore they had. When they found it out, there was only a little Jarosite left for them to save. This is the story I got but could not verify it as the mine had been shut down for a long time.

I can now believe this story of the richness of the ore because after my brother's death his specimens came to me which verified it. My brother had spent three years at the School of Mines at Golden, Colorado, then he took a year off to work in the mines before finishing his course. He went to work at the Tintic Standard in the Tintic District of Utah. This was at the time when the mine had a lost of Jarosite. After starting as a timberman's helper he changed about until he spent the last six months in the assay shop before going back to school. While there he collected a number of small specimens and vials of Jarosite. These were of several different types but little difference could be seen with the eye. They used the names po-

tassium jarosite, soda jarosite, plumbo jarosite, argentojarosite, ammoniojarosite, etc., to describe their samples, the name being the mineral combined with the jarosite though it could change and did from one to the other. I later talked to the man who was superintendent at that time and he said that constant samples had to be taken as that was the only way to tell if the mineral was worth mining. It was worth watching as some of the argentojarosite was worth \$4,000.00 a ton and that is very rich ore.

The Jarosite at the Tintic Standard Mine was never very hard. The hardest I have comes from Laurium, Greece. Some I got last year from Mexico was like soft chalk with a bright micaceous appearance. Many Jarosites have this look in different degree. The three I am labeling tonight are from the same district in Nevada but are all different in looks and color. One, a Plumbo argento jarosite, is soft and of a yellow-brown color with a micaceous look. The second, Argento-plumbo jarosite, is a light red with a soft micaceous luster on old surfaces. The third, Plumbo jarosite with copper, is chalky material of a tan color with no luster; the copper is a green incrustation in vugs in the Jarosite.

Jarosite has been found in a number of places in the United States but I have specimens only from the Tintic District of Utah, the Boss Mine near Goodsprings, Nevada, and the last from the Bristol District, Lincoln County, Nevada. I do not know the value of Jarosite as an ore but believe it to be in the minerals combined with the Jarosite. For the few who have been wondering what plumbo and argento mean — Plumbo stands for lead and argento for silver. Some of the jarosites make nice specimens but all of it has to be handled carefully especially the micaceous type which can lose its brightness by rubbing though in time it may come back.

## USE OF MINERALS BY THE COPPER ESKIMO

By JOEL MARTIN HALPERN

To most people the mention of the word Eskimo brings to mind a picture of a man clad all in furs; he is crouched over a hole in the ice patiently waiting to harpoon a seal. All around him are masses of ice and snow. To a limited extent this is true, but actually the Eskimo way of life is infinitely more complex than most people imagine. This article is concerned only with a specific group of Eskimo and a very specialized part of their technology. A brief description of general Eskimo life is therefore justified. The Eskimo occupy the shores of the Arctic Ocean and some of the inland territory all the way from eastern Siberia to northern Greenland. The Copper Eskimo, in particular, live in the Northwest Territory of Canada around the Coronation Gulf and Coppermine River regions. Throughout the central Canadian arctic areas and Greenland most of the groups specialize in the hunting of sea mammals, but even within this area there are groups whose main source of food is caribou; they are called the Caribou Eskimo. In Alaska many groups specialize in hunting large and small whales.

The very elaborate technology also varies to suit the specific needs of the group concerned. Before we look at the use of the mineral resources of the Copper Eskimo it might be well to mention that other Eskimo groups utilized minerals which were unknown in this area. The Alaskan Eskimo used jade extensively while those of northern Greenland used meteoric iron. Beside this quartz was used for religious purposes and iron oxide for decoration. Pyrites were also used for the making of fire by many different groups.

The two chief minerals we will deal with here are native copper and soapstone. The copper was usually in the form of float and was found in many places from the north shore of Great Bear Lake to Victoria Island in the Ca-

nadian archipelago. The Coppermine River and the Coppermine Mountains west of it, however, appear to have been the main source of supply. Some of the chunks seem to have been of a size which would rival some of the more common finds in Michigan and elsewhere. Jeness describes obtaining from a native a solid block which weighed forty pounds and which had originally been twice as large. This specimen was found on the Coppermine River. Stefansson relates the finding of a piece of float copper as large as a house building brick on the north shore of Great Bear Lake.

These deposits attracted the attention of traders of the Hudson Bay Company as early as 1766. Samuel Hearne was sent to investigate in the hope that these deposits might possibly lend themselves to commercial exploitation. After great difficulty he finally reached the river which he named the Coppermine. He reported that the native copper was extensively utilized by the Eskimo who lived there. As a result of his explorations, however, the section proved to be too remote and too inaccessible even if large ore deposits were to be found there. To date there has been no commercial mining of the mineral here. At a spot now called Bloody Falls the northern Indians who accompanied him massacred a small party of Eskimos camped on the shore of the river.

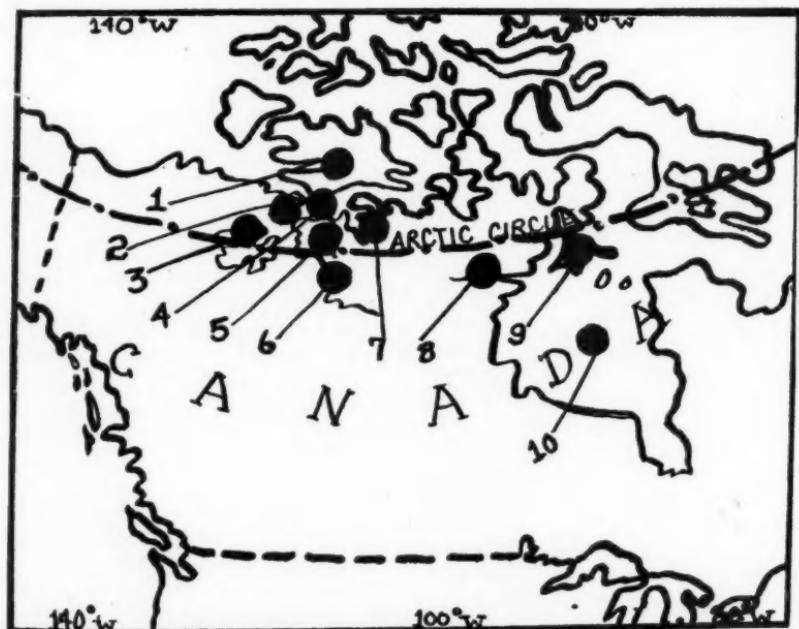
From the copper in these deposits the natives made knives, *ulos* (a special woman's knife similar to our half-moon shaped meat choppers), ice-picks, and harpoon heads. In the manufacture of certain of these copper objects considerable skill and ingenuity was shown. To make a gaff-hook, for example (see illustration), a rough prong was first hammered out of a small mass of float copper using a beach pebble. After that it was smoothed and finished by rubbing against a large boulder. A piece of caribou antler was shaped into a head and then holes were drilled through it, and each

prong was attached by passing one end through a hole and hammering it to a flat rivet-head. The prongs were then secured by being wedged in place with small pieces of copper. Copper rivets were sometimes used to strengthen the gaff-hook. The head was beveled where it was fastened to a wooden shaft, and it was held in place with copper pegs, the junction being securely wrapped with strips of raw sealskin. When completed the shaft was about fifteen to twenty feet in length and about one and a half inches in diameter.

One authority, Jeness, maintains that the Eskimo inhabiting the regions around Coronation Gulf were in the pseudo-metal age, — that is, the metal was used just as if it were malleable stone. This is supported by the fact that no refining techniques were used on ores and that the metal was not in any way treated

with heat. He goes on to state that the use of copper among the Eskimo is relatively recent and does not date back more than four or five centuries. Jeness thinks the wide-spread copper culture of the northern Indians was much older. The Eskimos are said to have acquired the use of copper from them. As partial evidence the lack of any copper artifacts in archaeological ruins excavated in this area is cited. These theories, however, have not as yet been completely accepted.

The other important use of minerals was in the making of stone pots and lamps. The latter were used in the snow igloo and were equipped with a moss wick and seal blubber to provide light and heat and were further utilized for cooking. Fresh soapstone (talc chlorite schist) is the chief raw material, although the Southampton Islanders, far to the east in Hudson Bay, lacking soapstone



Map of Canada. Scale—1:41,600,000  
Key to locations mentioned.

1. Victoria Island
2. Bloody Falls
3. Great Bear Lake
4. Coronation Gulf
5. Tree River
6. Coppermine River
7. Bathurst Inlet
8. Chesterfield Inlet
9. Southampton Island
10. Hudson Bay

used limestone instead. This limestone had to be painstakingly cemented together and did not work out very well. The soapstone could be worked quite easily even with so soft a material as copper. No great skill was required, and even the largest lamps could be made by an Eskimo in a few days. Some people in need of lamps made a special trip in the summer to the area around Tree River and returned with newly-made pots even though they had never seen one made before.

All these objects — soapstone pots and lamps, copper implements, and even pyrites were valuable items for trade. Some nearby groups who lacked things to trade made special trips to the area inhabited by the Copper Eskimo to collect their own copper and soapstone. This was possible since none of these resources of nature were considered to be "owned" by the local tribe. These trade regulations were quite interesting; one group, the Naneragmiut, received copper and caribou skins from the north and articles of wood from the south. They then acted as go-betweens for two other groups. Their own local resource was some iron pyrite deposits which were universally used by all the Copper Eskimo in making fire.

Another tribe, the Kanhiryuarmiut, were widely known as the makers of weapons and implements of copper. They obtained their supply from pieces of float which occurred near the deposits northeast of Prince Albert Sound on Victoria Island. They made long-blade hunting knives, *ulos*, crooked knives for whittling, copper rods for foreshafts of seal harpoons, points for ice chisels, blades for caribou spears, prongs for fish hooks, needles for sewing, and nails and spikes used for mending wood, horn, and bone. Some of these articles as well as a supply of the raw material were taken on their long trading excursions to the head of Chesterfield Inlet on Hudson Bay, where they were exchanged for wooden articles. Similarly other tribes tended to specialize in the manufacture of soapstone pots because there were deposits



Head of gaff-hook with copper prongs.  
(After Cadzow)

of the material in their own territory; they often supplied pots for people as far west as Siberia.

Besides this limited tribal specialization there was also some individual specialization. Lame men or others unable to hunt often acquired considerable skill in the manufacture of these implements so that their products were noticeably superior to others. They were paid in caribou skins and other items which were necessary to feed their families.

Today, of course, conditions have vastly changed, and copper implements and soapstone vessels are no longer used. Many modern Eskimo work for wages and live in tar-paper shacks. Others trap furs to buy flour, guns, and other commodities which have now become necessities.

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## EASTERN FEDERATION CONVENTION

The Pioneer Convention of the Eastern Federation of Mineralogical and Lapidary Societies, held October 25 to 27, 1951, in Washington D. C., was an outstanding success. Mr. French Morgan, the Federation's Historian, is authority for the statement that among the delegates and visitors who registered, were addresses "from Norway on the East to Korea on the West, and from Toronto, Canada, to Birmingham, Alabama".

Quality was the predominating note of the entire program. Included in the long list of fine educational speakers were Dr. William F. Foshag, Dr. George Switzer and Mr. E. P. Henderson, all of the United States National Museum Staff; Dr. Charles Milton of the United States Geological Survey; Dr. Carl Nefflin of the United States Bureau of Standards; Dr. John P. Marble; Commander John Sinkankas; Frank L. Hess; Louis Eaton Shaw; Leo Houlihan; Dr. J. Frank Shurer; John S. Albanese; all arranged for by the very excellent program director, Colonel R. L. Mitchell. No where else, nor at any other meeting or convention, has ever such an array of talent talked on such a wealth of interesting topics, and it was heard over and over that, if there had been no other attractions at the gathering, this feature alone would have been payment enough for the guests who registered from Korea to Norway.

At the Federation's business meeting, most of the original year's officers were returned to serve a second year. Harry L. Woodruff, President; B. J. Chromy, Secretary; J. H. Benn, Treasurer and French Morgan, Historian, all of whom had served enthusiastically and well dur-

ing the trying formative year, accepted the responsibilities for a second term. Regret was expressed that David E. Wallis, who acted as Convention Chairman as well as initial Vice-President, declined renomination as he will be unable to devote his time to the duties. Mr. Albert S. White, Member from Flanders, New Jersey, was elected Vice-President. A new office, that of Executive Vice-President, was created to share the responsibilities and multitude of duties incident to a Federation convention, and the Federation was very fortunate to elect William B. Aitken of Westwood, New Jersey, to this important new office.

Outstanding among the many fine displays of Members' work shown at the New National Museum were: The Faceted Gems by Commander John Sinkankas of the Washington Cutters Club; Magnificently Mounted Spheres by Leo J. Houlihan of Rochester, New York; Fine works of Art in Silver by Edward A. Geisler of Baltimore, who is well known for his Bambi motif in silver designs; Cabochons by French Morgan of Washington; and the Complete Collection of Agate Silverware shown by James W. Anderson of Baltimore. All of these entrants won first awards in their classes.

Large silver bowls donated by anonymous friends were awarded to the Mineralogical Society of the District of Columbia for the best Club Mineral Display, and to the Gem Cutters Guild of Baltimore, Maryland, Inc., for the best Club Lapidary Display.

A highly successful auction, ably conducted by Federation Member Tony Bonano, of the materials donated by dealers and friends, resulted in \$185 ad-

dition to the Federation treasury. Imprinted cloth bags containing several pieces of locally found minerals and cutting material were distributed to all registrants at the show. These appreciated gifts were arranged by Phil Cosminsky. Numerous dealers had a variety of attractive materials available, among whom were Tom Warren from Pasadena, California, who is President of the Dealers' Association as well as the manufacturer of fluorescent equipment, who showed his marvelous Fluorescent Display; Bob Roots of Denver was there with his gold and other Western specimens; Dr. Frank Mueller of Kansas City had a booth with some gemmy slab material; Neal H. Guffy had carvings and stones from the Orient; Henry Schwab Lapidary, Inc. of New York showed excellent faceted synthetic materials.

The group were honored by the presence of Dr. Frederick H. Pough, Curator of the American Museum of Natural History, New York City, and "Uncle" Billy Pitts, Dean of all Lapidaries, from San Francisco, California, who stopped by on his annual trek to Florida.

The climax to the educational and entertaining three-day Convention was the Banquet so beautifully decorated and arranged by Mrs. Helena Haliday and which was attended by approximately one hundred guests, in the Crystal Room of the Willard Hotel. Here the winning Clubs were awarded their engraved silver bowls.

All are looking forward to the next year's Convention, planned for the Newark, New Jersey, area, at a place and time to be determined in the near future, and it is hoped that many who missed the fine features available at this first Eastern Federation Convention will be able to enjoy next year these unquestionable advantages in education and fun.

To President Harry Woodruff, Father of the Eastern Federation, and whose untiring efforts and experience so materially contributed to the success of this, our first year—CONGRATULATIONS!

His message is "Hope to see *You* in '52".

PAUL O. DRURY  
Publicity

## NEW FOSSIL REPTILE FOR CHICAGO MUSEUM

The division of paleontology at Chicago Natural History Museum, Chicago, Ill., has become the proud possessor of a skeleton of *Cotylophorus romeri*, a recently discovered addition to the fossil fauna of Oklahoma and Texas. This Permian reptile, that grew to sizes up to about 12 feet in length and to a weight of about a third of a ton, lived about 240 million years ago in rivers and swamps.

The animal had a remarkably small short skull connected by a stocky neck to a relatively huge, low barrel-shaped trunk, according to William D. Turnbull of the museum's paleontological staff who collected it near Norman, Oklahoma. The teeth are blunt, indicating it lived on a diet of grasses and the like. So dis-

proportionate is the skull to the rest of the body that the beast must have spent most of its time engaged in the mechanical process of ingesting sufficient food through its small mouth to nourish its large body, says Turnbull. The limb bones are short and very broad, indicating a sluggish, plodding type of locomotion. The animal's tail was about half the length of its entire body.

The first specimen of *Cotylophorus* was discovered in 1937 by Dr. J. Willis Stovall of the University of Oklahoma. The total number of skeletons unearthed to date is 27. The museum's specimen was obtained by an expedition dispatched jointly by Chicago Natural History Museum and the University of Chicago.

## IN MEMORIAM

FRANK J. CAMPBELL

On September 9, 1951, Frank J. Campbell was crushed by a large boulder on the Priddy Ranch, Madras, Oregon, where he had gone to hunt Agates with a party of friends. He was not digging when the accident occurred, just sitting in the shade of a boulder talking to A. W. Hancock, of Portland, Oregon, when without warning the two ton boulder rolled on him. He died instantly. That was the message that greeted me from Earl M. Vandeventer of Caldwell, Idaho, when I opened my mail several days later. Van and Frank were very good friends, they had had a good time at the Tacoma Convention and Frank was to have visited him at Caldwell several weeks later. He was every one's friend and according to Van would not knowingly harm a living thing. I never met him personally, but his many letters to me reveals a character second to none. He was always trying to help someone in distress, and his many letters to me helped to cheer me up when I was confined to a Hospital bed with a severe heart ailment, not knowing whether I would be there the next morning. Words cannot express my appreciation of a friend like that. I am going to quote one of his letters to me, it is the letter he sent to me when he heard that I was in the hospital. It will give you an idea of the man's wonderful character.

Jan. 9, 1950

Dear Fred:

They can't do that to you. Taint right! Why lock a fine, young, viril, handsome, energetic, go-getting young man up in bed when there are so many of us old wornout buck's eatin forage and never pulling a pound on the sleigh? Bet I can guess the answer. There are a lot of good, interesting books about the outdoors and about what the crust of this old planet is made of that you have been wanting to read—well, they just put you in drydock for a time while they scrape the barnacles off your bottom and let you read. Who wants to stick to the same old highway all of the time anyway? Some of these old side trails up which we find ourselves now and then offer some of the finest gems. I've been up the one you have taken on two different occasions. My first was in 1941. Spent five months looking around that time—21 days with a cute little oxygen tent over my head. Gosh, how I came to love that little tent! Played that I was Napoleon on a campaign and that all the nurses and Docs were "orderlies" who brought me everything day or night. The second round came during the last war. Volunteered as an O. P. A. helper. Processed gas and tire applications. Spent 3 to 6 hours a day and a lot of nights getting the work out. Of course a lot of greedy guys called us "you know what" and all that but who cared. Not

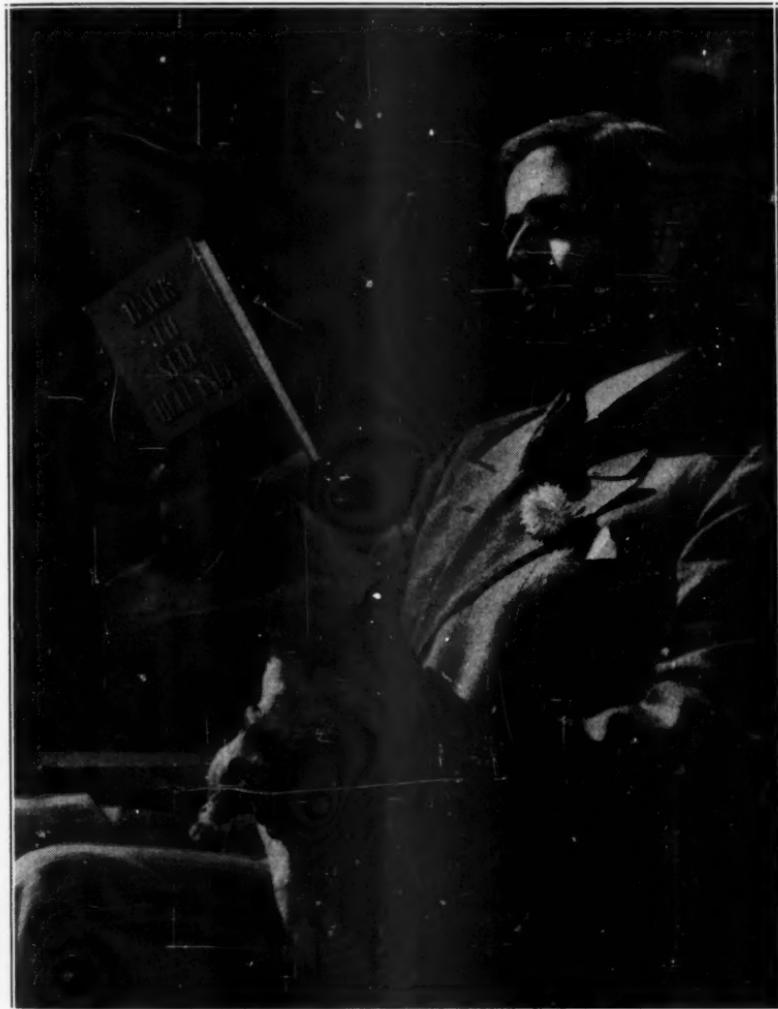
me. I had soldiered before in two wars, Spanish American and the first W. W. Then one night after midnight—kaplunk—it hit me. Thought I was going to have a baby. Pains came and went just like labor with little rest periods in between. 'Twas that old pump busted again—and this time not from over exercise but from just plain anxiety over the rations that I could not issue because of scarcity. That time I learned a new lesson. "Don't give a dam for nothin'" "Let the ship burn. She ain'tourn." That's one thing that got me into rocks—or rocks got into me. It's a nice gentle hobby. And today's catch doesn't have to be scaled tonight or stink. It will keep. Take it easy, Fred, and have a good time while you are there in bed. You've earned a good rest even though it was not exactly the way you had planned it. There is a heart folder that did me a lot of good. It helps a fellow to set his feet (or the bed pan) where he can get a good look at it and figure things out for himself. I'm enclosing a copy for you. It explains how old mother nature sets in and digs a new batch of irrigation ditches around the one that became blocked with a lot of floating cats and dogs and soon that wilted corn down there on the left little toe will be perking up with a new supply of red juice. BUT—while this new digging is going on one has a part to do himself, an easy part; just sit tight (lay tight I mean) so the big irrigating ditch does not bust loose and overflow the dike and mess up the whole job. Good time right now to lay in. Weather aint no good no how for fishin, nor rockin. An' in the spring you'll have a darned acceptable excuse for not mowing the lawn. An' you can bet your last eggnog that if my prayers can find their way up through the cracks and crevices of this old shack the good Lord will guide you to batches of beautiful agate in the months to come that will make your eyes google.

Sincerely, your old timer,  
Frank

Do you wonder that I consider him as one of my best friends.

I am indebted to his daughter, Mrs. Joyce Goodspeed and her husband, for the following.

"He was born Jan. 28, 1879, at Royal Oak, Mich. Served as a private in Co. M 32nd. Mich. Infantry. In 1903 he became Advertising Manager of the Pontiac Daily Press. In 1907 he formed the Campbell Advertising Agency. In 1917 he sold his interest in that company and in 1918 served with the A. E. F. in France in the Supply Dept. of the Y. M. C. A. operating army canteens in the advanced zones. From 1919 to 1921 he served as advertising manager of the S. S. Kresge Co. In 1921 he was advertising manager of the



**Frank J. Campbell**

First National Bank of Detroit, he resigned in 1926 to be with his invalid wife, Mrs. Campbell passed away in September, 1932, and Frank, as he put it, "Believing that old models should be kept out of traffic" retired from active business for a life in the great outdoors. During world war two he served as a volunteer worker on the Oakland County, Mich., ration board until a second heart attack sent him back to quieter pursuits".

About 1945 he became interested in minerals and had built up a very nice collection. In June, 1948, while attending a Mineral convention in Denver, he met another rock hound, Earl VanDerveenter, from Caldwell, Idaho, and through him became a member of the Old Timers Mineral Club and through the club we became pen pals and a more enjoyable one, I never had. An article written by myself, describing a trip taken by my

wife and I in 1949 entitled "Foot Itch" and published in the June, 1950 issue of ROCKS AND MINERALS decided him on becoming a member of the Rocks and Minerals Association so he would not miss any of my articles as he knew the places I had been and didn't want to miss anything.

He is survived by two daughters, Mrs.

Thomas T. Dunn of St. Petersburg, Florida, and Mrs. L. M. Goodspeed of Detroit, Mich. Interment was in Detroit, Sept. 15, 1951. Our heartfelt sympathy goes out to his family and many friends.

Fred R. Klink  
1440 Bryan Ave. S. W.  
Canton 6, Ohio

## RAMBLINGS OF A ROCKHOUND

By R. F. HENLEY

4075 19th Street, San Francisco 14, California

The monthly field trip of East Bay Mineral Society October 13 and 14 (1951) was along the Mother Lode Highway (Calif. 49) and I went along. It was no coincidence that this road bears number "49" as it was to commemorate the discovery of gold in California in 1849 and it follows the lode from its beginning at Mariposa to its northern end near Sattley, a distance of 277 miles.

California held a centennial celebration in 1949 and 1950 and the State Division of Mines issued a geologic guide book (Bulletin 141) which is cloth bound 8 x 11 inches, 164 pages containing complete and detailed sectional maps of the area with many pictures of buildings and ruins up to 100 years old, and also much geological information. It can be had postpaid for \$1.00 from Division of Mines, Ferry Building, San Francisco, Calif., and is well worth taking along by collectors. The road is liberally sprinkled with markers of historical sites of old abandoned mines and often stating the amount of gold produced, usually in the millions. Most of the gold mines are abandoned, some of them during the last war when the Federal Government stopped mining, and now with the shafts filled with water, the cost of labor and materials increased enormously they have been dismantled probably never to operate again.

The first stop of the caravan was at Hornitos, 134 miles from Oakland, Calif., where we collected epidote crystals in quartz and at the service station I captured a tarantula which now has a happy home in the Steinhart Aquarium

in Golden Gate Park. Hornitos is an almost ghost town of 126 people and the smallest incorporated town in California. One mile east of Hornitos we stopped at the old Lost Douglas Mine and collected quartz crystals on the dumps. Then to a point about 10 miles southwest of Mariposa where we collected small pieces of chiastolite which lay by the hundreds right in the roadway, the only difficulty being that we had to stoop to pick them up! Several miles farther south is the ruin of the first copper smelter in California, now only a couple of pillars of slabs several feet square and not what one's conception would be of a smelter. Doubling back on the trail we stopped a few miles north to gather garnets right by the roadway and then on to Mariposa for the night. Next morning we continued north and about four miles north of Mariposa stopped at the abandoned Pittsburg Landing (gold) Mine for large blocks of soapstone on the old dumps. A little farther on were the ruins of the first mint in California where by authorization of Congress in 1850 hexagonal \$50 gold slugs were cast and made legal tender to replace the practice of using gold dust as a medium of exchange. Like the smelter it was just a few thick walls of stone slabs like shale and not more than 15 or 20 feet square. They were minted for about two years when Congressional authority was withdrawn. They are now rare collector's items. Several miles farther and we were on a point at an elevation of 2225 feet and looking down into a canyon at the winding road which we were soon to travel

for 5½ miles to the little hamlet of Bagby and a drop of over 1400 feet. The canyon appears on the map as "Hell Hollow" and down in it we saw immense dumps at the Pine Tree & Josephine Mine which was not in operation. We proceeded north passing one old dump after another including the Mary Harrison which produced a million and a half of gold. A few miles further and about a mile south of Coulterville the road cut across the side of a ledge of mariposite and we secured large blocks. Down the bank is a block about six feet in diameter but it is still there. Mariposite is a muscovite, white and apple green, the coloring being due to chromium, rather granular and often too foliated for good cutting but good blocks are sometimes obtained for book-ends and I have even cut cabochons from it. I am looking for a block suitable for making a bead necklace. A few years ago I secured a block at the Idaho-Maryland Mine at Grass Valley which came from deep in the earth somewhere before reaching China and which was mostly a slightly discolored white with grass green spots making it look like a gorgonzola cheese. I sent some to America's most noted rock-hound whose business is making cheese and right away he wanted more "cheese."

The caravan was due to turn west toward home at Yosemite Junction but as I wanted to stay out another day I went on and spent the night at Angels Camp where the California Federation will hold its convention in 1952. There is an attractive museum here in charge of Mr. W. G. Daniel, President of the Calaveras Gem and Mineral Society which will be host to the convention, and there is on display a large and beautiful mineral collection belonging to Mr. Daniel but which no doubt will eventually belong to the museum. I was impressed by the large number of fine book-ends on display. I did a little trading with Mr. Daniel and secured a block of rhodonite from a location and of a pattern that was new to me. It comes from near the town of Plymouth but has been worked

to a point where blasting is necessary to secure more. I also secured a fine slab of ankerized antigorite (asbestos and serpentine) which is nicely marked and should take a fine polish. The Calaveras Society has recently completed its own club house and is the only society I know of that has done this. From Angels Camp I proceeded north to Sutter Creek, did a little trading at a wayside rockshop and then home by way of Sacramento. Highway 49 continues on north from Angels Camp for many miles and is well worth exploring and I hope I live long enough to do so.

Total distance traveled on this trip was about 450 miles.

#### HECKSHER PARK MUSEUM

##### Huntington, L. I., N. Y.

Located on the North Shore of Long Island in the town of Huntington is the Hecksher Park Museum, donated to the town by the late August Hecksher. The Museum though small, houses a collection of fine paintings by world famous artists, whose works date back to the 16th century. Other works of art, Indian relics and curios collected from all corners of the world are well displayed.

Of interest to readers of ROCKS AND MINERALS the item of most importance is the collection of Minerals which occupy a gallery of their own and are well worth a visit. Numerous specimens are from the old Franklin Furnace, N. J., locality such as large crystallized Jeffersonite, Garnet, Franklinite and Fowlerite; also a brilliant cut topaz-color Willemitte, presented by Mrs. James E. Hayes and many more outstanding examples from this world famous collecting ground.

The collection presented by The Nipissing Mines Co., Cobalt, Ontario, Canada, includes specimens of Erythrite, Chloanthite. Native Bismuth, Proustite and Annabergite. Among other specimens are several Zeolites from Paterson, and the Erie Cut, both in New Jersey, that had been presented by Mr. F. A. Canfield.

A Topaz crystal weighing fifty pounds and costing \$3,500.00 is on display. It was found in Brazil near Theophilo Ottoni.

The collection though small contains specimens of interest to Mineralogists and a few hours time devoted to looking it over would be well spent.

Merton McKown  
114-20 146th St.  
So. Ozone Park, L. I., N. Y.

## WORLD NEWS ON MINERAL OCCURRENCES

Items on new finds wanted. Please send them in.

Abbreviations: xl—crystal      xled—crystallized      xline—crystalline

**ALABAMA** — Blount Mountains lie on the border of Blount and Saint Clair counties in northern Alabama. A high peak of these mountains to the southwest is called "Button Mountain" due to the abundance of large sections of fossil crinoids that have a fancied resemblance to buttons.

**ARIZONA** — A nice group of amethyst xls on dark gray quartzite was donated recently to R & M by Plummer's, 2183-R Bacon St., San Diego 7, Calif. The locality is Four Peaks in the Mazatzal Mountains of Gila Co., Ariz., where amethyst occurs as crystals lining vugs in the Mazatzal quartzite. The specimen was mounted on a snow-white sponge-like thin slab which was not only beautiful material but being very light in weight and strong made an ideal base for the amethyst. As we had never seen this material before our inquiry to Plummer's brought the following reply:

"The white mount material is called sno-foam. It is used extensively by everyone out here and we took it for granted that it was used everywhere. It is often obtainable at florist supply houses and sometimes art dealers (sign and sho-card shops). We use it in a number of ways as a mount like that sent you; it is also being used in glass and plastic boxes

for gem cases. Another use is to make Christmas tree decorations. Sells very cheap."

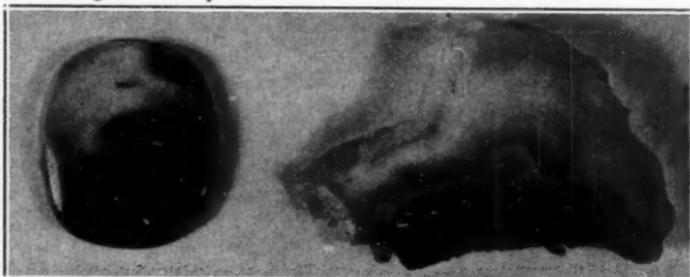
David P. Record, of the Mission Curio Mart, 4400 S. Mission Road, Rt. 3, Box 384, Tucson, Ariz., sent in the following item:

"I am sending you a picture taken of two agates I cut and polished. One, a Montana moss agate, in black and white, is an excellent profile of Franklin D. Roosevelt at the mike; the other, in brown and white, an Arizona plume agate, is a perfect little cross with surrounding halo, on a lonely desert hillside. I thought that you might like to print these as examples of unusual scenic agates—they cause lots of comment, altho the photographs don't do justice to the stones."

"The agate showing the little cross is about 1" by 1 1/4", reddish brown pattern on clear to white background. It was found near Tucson, Ariz."

The Montana agate will be described under "MONTANA".

Wilfred C. Eyles, Yermo, Calif., also sends in some contributions for Arizona. In his letter dated Dec. 18, 1951, he writes:



Two fine agates in the collection of David P. Record, Tucson, Arizona. Right is a brown and white Arizona plume agate showing a perfect little cross with surrounding halo, on a lonely hillside desert. Left, is a Montana moss agate in black and white showing an excellent profile of F.D.R. at the mike.

"As for news regarding finds of interest, I may enlighten you to the fact that at Tiger (Pinal Co.), Ariz., they have uncovered some beautiful specimens of museum quality malachite and azurite. Some are large crystals of malachite pseudomorph after azurite. I saw one specimen priced at \$150 and worth it. They also are producing some extra choice groups of cerussite; this has formerly been produced at this locality with other rare minerals but the present find is extra choice in reticulated groups, that are very brilliant and showy. The locality is the Mammoth Mine in Tiger, Ariz.

"Might mention another good find of some interest. Mr. Guy Hazen at Kingman, Ariz., recently uncovered a fine chrysocolla stained granite, about  $1\frac{1}{2}$  miles south of Salome (Yuma Co.), Ariz. This is being worked and sold for ornamental purposes; it takes a very fine polish, makes very showy book-ends and similar items."

ARKANSAS—To John O. Griesbach, Unit 82-D, Badger, Wis., we are indebted for the following item, dated Oct. 30, 1951:

"Two very interesting micro crystals recently obtained were aegirite var. acmite, as needles penetrating clear terminated quartz xls; and tiny gemmy clear green prisms of apatite and micro xls of browned zircon in nepheline-syenite vugs. These were from the Arch Street Pike Quarry near Little Rock (Pulaski Co.), Ark."

His letter dated Nov. 14, 1951, gives more information on the minerals and the locality as follows:

"The micro xls are found in vugs in nepheline-syenite, and associated with the apatite and zircon are pyrite xls, and aegirite var. acmite, the last named as acicular and radiating bright green xls penetrating stubby micro quartz xls.

"The nepheline-syenite occurs mainly in two facies, one very coarse with nephelite as gray to yellow gray anhedral masses to  $1\frac{1}{2} \times 1 \times 1$ ", with nicely formed biotite xls up to  $\frac{3}{4}$ " diameter but mostly about  $\frac{1}{4} \text{-- } \frac{3}{8}$ " diameter; aegirite as an-

hedral to subhedral black masses, and radiated clusters of the green acicular xls, var. acmite; zircon as subhedral to euhedral xls, brown-red elongated bi-pyramidal terminated prisms; and minor amounts of quartz, pyrite, and limonite.

"The fine grained facies includes all the above listed minerals but the crystalline masses scale no larger than about  $\frac{1}{8} \text{-- } \frac{3}{16}$ " diameter.

"The rock, nepheline-syenite, is being quarried by the Minnesota Mining & Manufacturing Co. for use as roofing granules (after being crushed, colored, and fused, the "granules" are applied to asphalt-felt base roofing material)."

CALIFORNIA — Wilfred C. Eyles, Yermo, Calif., in his letter dated Dec. 18, 1951, reports:

Two Los Angeles collectors, Burner and Meyer, have found some very fine sagenite agate southwest of Wingate Wash. (San Bernardino Co., Calif.), just outside of the Death Valley boundary of the Park. This is in rather large pieces and by its appearance shows it to be seam deposition.

W. C. Stevens, 910 Cambridge Ave., Menlo Park, Calif., has been making some interesting finds recently, judging by the four nice specimens sent in. One was a red hematite mass that was found on the sea shore about 12 miles north of San Simeon, San Luis Obispo Co., Calif.; another was a thin, dark green sawed slab (from a small boulder) of chalcedony that was found in the Eel River in the Holbrook and Whittemore State Park, Humboldt Co., Calif.; the 3rd was a drusy quartz on banded white chalcedony found on the hill on the beach road at San Gregorio, San Mateo Co., Calif.; and the 4th was a dark green serpentine (thin sawed slab from a small boulder) found on a small beach about 35 miles south of Big Sur, Monterey Co., Calif.

R. F. Henley, 4075-19th St., San Francisco 14, Calif., the popular author of "Rambles of a Rockhound" (a series of interesting trip articles that have been

printed in R & M), has sent in two minerals found on a recent trip. One specimen is a nice green compact talc mass that he collected from a cut in state highway 49 near Bagby, Mariposa Co., Calif.; the other was andalusite (chastolite), 6 nice little loose xls,  $\frac{5}{8}$ " diam., dark gray in color with black inclusions, that were found loose in roadway 10 miles southwest of Mariposa, Mariposa Co., Calif. An article on this recent trip appears in this issue.

**COLORADO**—F. C. Scanlon, 139 W. North St., Ilion, N. Y., was in Colorado a few months ago visiting a number of mines. At Leadville, Lake Co., he collected from the dump of the Matchless Mine, some interesting white cerussite xled on dark red massive hematite.

Most of the lead mines at Leadville have been shut down for years but many of them may reopen in the near future, if they have not already done so. The government has been drilling a new drainage tunnel (almost 2 miles in length) to drain the old mines and at the same time hoping to uncover rich ore deposits.

**CONNECTICUT** — Germanium has been found, spectroscopically, in the massive topaz at the noted topaz locality at Trumbull, Fairfax Co., Conn., so we are informed by Wilbur J. Elwell, 2 Duck St., Danbury, Conn.

**DELAWARE** — A unique specimen was received not long ago from O. A. Pickett, 108 Briar Lane, Newark, Del., that he had found on Bethany Beach, Sussex Co., Del.

The specimen is a dark brown cellular mass of limonite after wood embedded in a dark brown mass of consolidated quartz grains (the grains are cemented by limonite). The "wood" is penetrated by a number of round smooth holes which may have been bored by marine worms before it turned into limonite. The wood appears to have been part of a ship's timber (and it was so labelled by Mr. Pickett); perhaps it's a relic of some ship that was wrecked on the beach some hundreds of years ago (or washed to the

beach from only the Lord knows where) and since then has been replaced by limonite.

**FLORIDA**—E. H. Sarles, 2026 Elm Ave., Norwood 12, Ohio, sent R & M recently 3 nice specimens that are parts of loose sea shells that have altered completely into chalcedony, 2 are brownish and the 3rd is grayish. Each is  $1 \times 1\frac{1}{2}$  inches in size and they come from the noted phosphate deposits at Dunnellon, Marion Co., Fla.

**GEORGIA** — "In the State Museum (at Atlanta, Ga.), there is a very handsome specimen of crystalline epidote, obtained many years ago from Black Rock Mountain, which is a short distance north of Clayton (Rabun Co., Ga.), and not far from Rabun Gap.

"Mr. Gilbert W. (Gyp) Withers, our longtime gem enthusiast, made a special search to discover this locality several years ago, because he found that it had received honorary mention in the writings of Dr. George F. Kunz. In quoting Dr. Kunz from memory, (we do not have this work), Gyp says that Kunz wrote that the epidote from this locality is the finest ever sent to him from anywhere in the country. Kunz stated that it was obtained from a vein in pink granite and that the pink granite dike ran through the gray granite. He located the place one mile from Rabun Gap on the south side of the mountain (presumably Black Rock Mountain). Gyp states that he had searched the south side of Black Rock without success, but that ten times that much work might be necessary to discover it.

"This remarkable mineral occurrence will be a challenge to members of the Georgia Mineral Society, particularly because it offers an opportunity of obtaining epidote of gem quality. A.S.F."

The above item is from page 164, Sept.-Oct., 1951, Georgia Mineral Society NEWS LETTER (Dr. A. S. Furcron, Editor, 425 State Capitol, Atlanta 3, Ga.).

Another item on epidote in Georgia appears in the Nov.-Dec., 1951, issue of

the NEWS LETTER, p. 206. It reads as follows:

"J. R. Leimenstall, who is checking up on and rearranging the Dana collection of minerals in the State Museum on the fourth floor at the Capitol building, has called our attention to a large epidote crystal from Jackson County. The old label reads: 'From near Commerce, Jackson County. Gift of Hon. A. G. Wood.'

"The crystal is similar in appearance and as large as the largest specimen found on Mr. Clarence Wilson's farm recently, near Bakersville, N. C.—A.S.F."

IDAHO—To G. Elmo Shoup, P. O. Box 756, Salmon, Idaho, we are indebted for the following item, as per his letter of Oct. 2, 1951:

"Lemhi County, Idaho, Fair Mine Exhibit held Sept. 21 to 23, 1951, saw a reduced mineral display, however it did have a beautiful display of newly cut and polished opalized and agate material, displayed by Omar Long and H. P. Lester. This material is found in the Challis volcano formation (a rhyolite) and the locality is near the famed Primitive Area in Lemhi County. Mr. Lester reports that the material is in vein form, however quite scarce. I am sending you two pieces, rough and sawed. I am also sending you a clipping in regards to the awards of prizes during this great little fair of ours."

In the clipping received, we note that Mr. Shoup was awarded 2nd prize for his display of lead minerals. In the same letter Mr. Shoup further writes:

"Lemhi County, Idaho, has seen renewed interest in minerals in the last 3 months. A number of engineers of large mining companies are scouting our hills and examining those properties that carry minerals of the rare earths, tungsten, cobalt, manganese, fluorspar and lead. We, who have stuck to mining in Lemhi know that we have one of the largest radioactive areas in the U. S. and are not at all surprised that it is now being looked into, but it does our hearts good to see this interest. I am also sending you a sample of cobalt bloom

and green nickel stains on some of the cobalt ore from the now lively Cobalt (Blackbird District)."

The cobalt ore from the Blackbird District in Lemhi Co. consists of beautiful rose-red masses of erythrite (cobalt bloom) on massive smoky quartz. The erythrite occurs not only as heavy crusts but penetrates cracks and crevices of the quartz. In some specimens erythrite occurs as tiny radiating masses. The green stains turned out to be scorodite (an arsenic mineral and not nickel). It occurs as stains and also as thin green cellular crusts on quartz and associated with erythrite. Judging from the specimens received, the erythrite occurs in quartz veins, one inch thick, in black mica schist.

The rough moss agate from the Challis formation is a most interesting specimen. It is  $2 \times 2\frac{1}{2}$  inches in size and consists of brownish moss agate associated with a mottled brownish-pinkish common opal and some grayish chalcedony—all scrambled together. The sawed material is a thin slab,  $1\frac{1}{2} \times 2$  inches in size, with one polished face. It is a beautiful brownish moss agate.

ILLINOIS—Petrified wood has been found in Illinois. We noticed, not long ago in a display at the Chicago Museum of Natural History, Chicago, Ill., a nice 12 inch brown specimen that had been found on the surface at Springfield, Sangamon Co., Ill. (At Springfield is the State Capitol).

INDIANA—Walter Reeves, R 3, Greencastle, Ind., has donated to R & M an interesting brownish mass (from a large stalactite) that came from a cave near Mitchell, Lawrence Co., Ind.

IOWA—From Amel Priest, Peru, Iowa, we obtained on May 8, 1951, the following interesting information:

"Several years ago I found a piece of petrified wood in a ditch on my farm. I took it to a monumental company and had the face of it polished. It was beautiful, the grain resembling oak and shows very plainly. It evidently is the base or root part of a tree and weighs over 200

lbs. It is weather cracked and in time will probably go to pieces. I have a notion to break it up into small pieces for polishing and to trade for other minerals. It is in shades of brown and tan."

A 2 x 4 inch specimen from the huge stump was received Sept. 25, 1951. It is dark brown and black in color and is quite an interesting specimen. Peru is in Madison County in southern Iowa.

**KANSAS**—Pale brownish calcite xls in grayish limestone have been found in Kansas City, Wyandotte Co., Kans., by Mrs. John McCarty, 5824 E. 12th St., Kansas City 3, Mo. Please note that Kansas City is on the border of two states, Kansas and Missouri, the greater part of the city is in Missouri.

**KENTUCKY**—A nice specimen of peridotite from the diamond mine near Fielden, Elliott Co., Ky., was received not long ago from E. H. Searles, 2026 Elm Ave., Norwood 12, Ohio. The peridotite is a dark green igneous rock and contains olivine, garnet, mica, etc.

**LOUISIANA**—A nice specimen of jet black petrified wood (carbonized) has been received from Lovett Word, Box 1129, Leesville, La., which he found in a creek near his city in Vernon Parish. In his letter dated July 6, 1951, he writes:

"All the petrified wood found in the creek is jet black; the sample sent you is ash. The water in this creek is so clear it magnifies."

**MAINE**—A most interesting specimen has been received from Forrest Carpenter, Limerick, Me. It consists of massive smoky quartz of which one end is cellular (lined with drusy quartz stained brown by limonite) and of tabular quartz (small thin plates of quartz which are stained dark brown by limonite). A note from Mr. Carpenter reads: "This specimen is from an erratic and similar to others from the old Porter lead mine in Porter (Oxford Co.), Me. It is from the vicinity of the Porter lead mine."

This is the first tabular quartz specimen we ever saw, or heard of, from Maine.

**MARYLAND**—Native copper, associated with azurite, chrysocolla, cuprite and malachite has been found in red sandstone on the north bank of Two Pipe Creek near Detour, Frederick Co., Md.

**MASSACHUSETTS**—A. M. Dixon, Chestnut St., RFD 403, Foxboro, Mass., has sent in 15 cabochons ranging in size from  $\frac{1}{2}$  to  $1\frac{1}{4}$  inches in length. They have been nicely polished and make an attractive display, being mounted in a glass topped Riker box. Writes Mr. Dixon in his letter of Nov. 4, 1951:

"I am sending a small frame of cabs that may interest you. They were cut from pebbles gathered from the gravel fill under the Foxboro Company's new 50,000 sq. foot addition. This does not represent all the kinds of pebbles in the gravel; just the uncommon ones, or I might say the ones that are the least frequent."

The cabochons were mostly granite (black, dark gray, greenish, pinkish), green epidote and milky quartz. This is an instance what one may find in his own "backyard" if he will only take the time to look. Foxboro is in Norfolk County of eastern Massachusetts.

**MICHIGAN**—Beaconite, a fibrous variety of talc resembling asbestos, has been found at Beacon, Marquette Co., Mich., and named for the locality.

**MINNESOTA**—About 12 miles southeast of Ely, St. Louis Co., Minn., a copper-nickel deposit has been discovered recently. The ore minerals are chalcopyrite, pyrrhotite, and pentlandite. The deposit is being prospected.

**MISSISSIPPI**—In the calcareous clay beds at Yazoo City, Yazoo Co., Miss., a number of fossils have been found of which the most interesting is that of the *Zeuglodon*, a fossil whale. This mammal had a length of 70 to 80 feet and must have weighed several tons.

**MISSOURI**—Mrs. John McCarty, 5824 E. 12th St., Kansas City 3, Mo., sent us recently some pebbles from Missouri City, Clay Co., Mo., which she collected after the heavy floods of July 13

and 14, 1951 (see *R & M*, Nov.-Dec. 1951, p. 634, in reference to the floods, the most disastrous in the State's history). Her letter of Oct. 1, 1951, informs us: I am sending you a few pebbles from Missouri City where the water threw them up on the levee."

Among the pebbles received were dolomite (pinkish, xled); quartz (dark grayish chalcedony); and quartz (brown, red jasper).

We are very grateful to Mrs. McCarty for cooperating with us in collecting the pebbles from the flood area.

**MONTANA**—In the Nov.-Dec. 1951, *AMERICAN MINERALOGIST* (Dr. Walter F. Hunt, Editor, University of Michigan, Ann Arbor, Mich.) Charles E. Graham and Forbes Roberston report a new occurrence for dumortierite (pp. 916-917). The new locality is in Madison County, Mont. (about 14 miles east of Dillon), where the dumortierite is found in foliated pegmatite in the Ruby Range. The pegmatite has been traced for more than 2500 feet in a N. 50°-65° E. direction, has a maximum width of about 60 feet and is composed of microcline-microperthite, quartz, oligoclase, and muscovite. Black tourmaline and the royal blue dumortierite are found in quartz-rich pods or irregular vein-like bodies within the pegmatite. A green variety of dumortierite is also present.

David P. Record, of the Mission Curio Mart, 4400 S. Mission Road, Rt. 3, Box 384, Tucson, Ariz., sent in the following item:

"I am sending you a picture taken of two agates I cut and polished. One, a Montana moss agate, in black and white, is an excellent profile of Franklin D. Roosevelt at the mike."

A later letter informs us that: "The Montana moss agate showing a very recognizable profile of Franklin D. Roosevelt at the mike, is black on clear agate, about 1 x 1 1/4 inches in size. It was found in the Yellowstone River Valley of Montana and was cut and polished by myself. Hardly anyone fails to recognize the profile when shown it."

See Arizona for the picture mentioned.

**NEBRASKA**—Black masses of pyrolusite occur in limestone exposed along the Missouri River north of Ponca, Dixon Co. Nebr.

**NEVADA**—A new mineral, a lead antimony sulphide, has been found in the Red Bird mercury mine, Pershing Co., Nevada, and named robinsonite, in honor of Dr. S. C. Robinson of Queen's University in Kingston, Ont., Canada.

Robinsonite occurs as a soft primary mineral with pyrite, sphalerite, stibnite, and boulangerite as small pieces in oxidized ore-bodies at the Red Bird mine. Announcement of the discovery was made in a formal paper presented Nov. 8, 1951, by L. G. Berry, Joseph J. Fahey, and Edgar H. Bailey, at the recent annual meeting of the Mineralogical Society of America in Detroit, Mich.

**NEW HAMPSHIRE**—Ernest G. Reinhold, 162 Colonie St., Albany 4, N. Y., in June 1951, found a nice group of 3 beryl xls on the dump of the Big mine in Alstead, Cheshire Co., N. H., and had a picture in color taken of it. The largest xl in the group is 3 5/8 x 1 1/4 x 3/8 inches in size. "I moved about 2 tons of rock before I found this specimen," he informs us in his letter of Oct. 1, 1951.

**NEW JERSEY**—The serpentine quarry on the Delaware River, 2 miles north of the toll bridge at Phillipsburg, Warren Co., N. J., has been reopened, so we have been informed. This was the former Rock Products Co., quarry. Has any reader visited the quarry recently and if so were any interesting minerals found?

**NEW MEXICO**—Interesting specimens of white tabular quartz (pseudomorph after tabular calcite) with interstices lined with tiny rock xls, have been found in the Mogollon Mountains, Catron Co., N. Mex., by Don Alfredo, 322 Linda Vista, Las Cruces, N. Mex.

**NEW YORK**—A very good specimen of red jasper, 2 x 3 inches in size, has been found by the Editor of *R & M* at the new construction site (U.S. 6 at Queensboro Lake) in Bear Mountain Park, Orange Co., N. Y. This is of good quality and compares favorably with

jasper from many of the western localities and is an indication that good cutting material is available within a few miles of New York City. The specimen is a pebble and was found in the dug-up terrain bordering the new road.

Small greenish apatite xls in pale smoky quartz mass have been found in the stream at Pixleys Falls near Rome, Oneida Co., N. Y., by E. H. Sarles. 2026 Elm Ave., Norwood 12, Ohio.

**NORTH CAROLINA**—Bright brick-red and yellow jaspers have been found at Reed's Creek, Granville Co., N. C.

**NORTH DAKOTA**—Near Grenora, Williams Co., N. D., there are saline lakes containing sodium sulphate, magnesium sulphate, calcium sulphate, and sodium chloride.

**OHIO**—The following letter, dated Nov. 23, 1951, comes from Vernon D. Richmond, 1018 Mott Ave., Toledo 5, Ohio.

"Am taking the liberty to mail you a xled mineral that I discovered in a quarry at Woodville, Sandusky Co., Ohio, a few days ago. It was seen protruding from a cavity about half-way up the 90-foot wall that is solid limestone. With the help of my good friend, Elmer Edensburn, we were fortunate in finding several nice specimens in this one and only cavity along the entire wall. We reached it with the aid of a long extension ladder, but feel we were well rewarded for the risk we took in recovering it. We are not sure of what it is or with what it is coated. It is both fluorescent and phosphorescent under the short wave lamp and some of the massive material was quite a deep blue. We know that calcite, celestite, and aragonite are found at this limestone quarry but as far as we know this type of mineral has not been found there before. I would deeply appreciate it if you would identify this for me?" The specimen is a beautiful xled celestite, white in color with chisel-like terminations. C. O. Gettings, 2001 Starr Ave., Toledo 5, Ohio, has found this type of celestite at the above

quarry some months ago and he called it "chisel-point celestite". It is encrusted with small whitish rhombic calcite xls that fluoresce and phosphoresce greenish.

Mr. Gettings reports, in his letter dated Aug. 29, 1951, that several weeks ago a pocket was found in the Pugh limestone quarry, near Bowling Green, Wood Co., Ohio, that contained at least a ton of calcite xls. He has found 5 different terminations in the calcite from this quarry, the rarest is the result of a change in crystal habit. Very excellent examples are found of the basal terminations. The colors of the calcite vary from clear optical (double refraction), lavender, yellow, amber, and black.

In his letter of Sept. 24, 1951, Mr. Gettings reports:

"A new quarry is being opened at Paulding, Paulding Co., Ohio. This is in the Monroe limestone near Columbus limestone and I doubt that there will be anything but calcite xls. Paulding is nearly 100 miles from Toledo so I may not get there for some time."

**OKLAHOMA**—Common opal have been found in the agate field 6 miles east of Mangum, Greer Co., Okla. Specimens seen were reddish in color and not of good quality.

**OREGON**—Beautiful mottled brown and red jasper has been found at Grants Pass, Josephine County, Ore.

**PENNSYLVANIA**—Leonard J. Duersmith, 405 Poplar St., Columbia, Pa., has made another interesting find. The find consists of yellowish crysotile asbestos (serpentine) banded with magnetite. In some specimens sent R & M by Mr. Duersmith the magnetite is in thin sliver-like form intimately banded with the asbestos. Yellowish-green serpentine is associated with the magnetite in one specimen seen. The locality is Stillwell's serpentine quarry in Union, southern Lancaster Co., Pa. Union is about 8 miles south of Quarryville. The serpentine is used for refractory and shipped from Oxford, Pa., to a company in Ohio for processing.

Howard Ennis, 321 N. Washington St., Wilkes-Barre, Pa., has been finding some nice rock xls near his city. The xls occur in a vein in the ledge on Wilkes-Barre Mountain, 2 miles south of Wilkes-Barre, Luzerne Co. A specimen  $2\frac{1}{2}$  x 3 inches in size, was donated to R & M by Mr. Ennis; it consists of small rock xls encrusting gray sandstone.

**RHODE ISLAND**—We hope to print in this issue an article covering the Editor's recent trip to Rhode Island where one of the localities visited was the famous amethyst occurrence on Bristol Neck near Bristol, Bristol Co. No amethyst was found on the trip, made in the company of Prof. Alonzo Quinn and Donald S. Wrathall, but in Mr. Wrathall's collection is a beautiful one inch deep purple gemmy xl that was found in 1851. Where we had parked our car, near the locality, the terrain was once noted for loose amethyst xls but a pier of the present Mt. Hope bridge rests on the site, obliterating the locality. Mr. Wrathall, however, gave the Editor a very nice loose xl (one of his duplicates). A few days after the Editor returned home, he received another xl from Mr. Wrathall; this was a poor one, however, but it was sent because — Mr. Wrathall had gone back to the locality and out of curiosity searched the terrain around the bridge pier to see if an amethyst could be found. He spent a few minutes only at the site and was satisfied to find the one, just to convince himself that amethyst is still available. Mr. Wrathall lives at 47 Common St., Providence 8, R. I.

**SOUTH CAROLINA** — One of the important gold mines in the south is the Haile mine in Lancaster Co., S. C. (situated 3 miles northeast of Kershaw, Kershaw Co.). The ore carries native gold, pyrite, pyrrhotite, arsenopyrite, etc.

**SOUTH DAKOTA**—Interesting grayish-white compact limestone containing remnants of fossil shells outcrops along the north bank of the Missouri River at Yankton, Yankton Co., S. D. A nice thin slab, 3 x 5, was sent R & M by

Mrs. E. P. Olson, Box 425, Beresford, S. D.

A small but beautiful brown and white polished agate, known as the Fairburn agate, was sent R & M by Felix Scanlon, 139 W. North St., Ilion, N. Y., who collected it not too many months ago. The locality are the Badlands, about 12 miles east of Fairburn, Custer Co., S. D.

**TENNESSEE** — A nice specimen of xline grayish-pinkish limestone through which are disseminated small xline masses of galena, was received recently from William M. Johnson, R. F. D. 6, Knoxville, Tenn. The locality for the limestone is Knoxville, Knox Co., Tenn.

**TEXAS** — One of the nicest petrified wood pebbles we ever saw, a grayish compact  $1\frac{1}{2}$  x 2 x 3 inch mass was found near Forestburg, Montague Co., Texas, by L. H. Bridwell (now deceased) who lived in Forestburg. The pebble must have come from a stream bed, as it is nicely "polished."

**UTAH**—Wilfred C. Eyles, of Yermo, Calif., informs us that two collectors, Shaw and Jameson of Yermo, mined out some very choice smoky quartz groups which occurred in albite and associated with large white crystals of microcline. The smoky quartz crystals were the most brilliant Mr. Eyles ever saw, and jet black; some of the crystals were as much as 3 inches in diameter and 4 inches long. The locality was near Milford, Beaver Co., Utah.

We are indebted to Howard V. Hamilton, 187A Franklin Ave., Vandergrift, Pa., for the following item that appeared in the Oct. 1, 1951, CHEMICAL & ENGINEERING NEWS.

"Recently prospectors for the Barite Corp., while working away on a mountain-top plateau 9,000 feet high in northern Utah, hit upon a source of quartz that more than measures up to stockpile requirements. This is the first discovery of its kind in the history of the United States. The quartz, of particular importance to the manufacturers

of electronic equipment, was discovered on the Goshute Indian Reservation."

The material found, apparently, is rock crystal and the Goshute Indian Reservation is in the western part of the State, in western Juab County.

**VERMOUNT**—Some very nice pyrite cubes in dark green soapstone have been found at Perkinsville, Windsor Co., Vt., by Stanley Goding, Box 815, Springfield, Vt. "The pyrites from this locality have all their corners cut off which distinguish them from those from Chester, Vt.," he informs us.

**VIRGINIA** — Beautiful specimens of chalcotrichite (cuprite), as small reddish needles in cavities of rock, have been found in the copper mines at Virgilia, Halifax Co., Va.

**WASHINGTON** — Edgar C. Stinger, Black River Quarry, Inc., 6808 So. 140th St., Seattle 88, Wash., has been finding some interesting minerals in the quarry, whose rock is basalt. A number of specimens were sent R & M by Mr. Stinger among which were:

*Biotite.* Black plates with massive smoky quartz.

*Calcite.* Brownish xline band around bluish chalcedony.

*Pyrite.* Thin xline band encrusting the above xline calcite. Also as small striated cubes in basalt.

An interesting specimen is a dark gray quartz (looks like quartzite) one face of which is encrusted with a thin dark brown quartz layer (the brown is a limonite stain) full of small pits which show the existence of some previous mineral that had disappeared. Smooth surfaces on this face are striated so it was believed that striated cubes of pyrite once occupied the pits. This was verified when it was noticed that another unstained face showed a few tiny lustrous striated cubes along with 2 or 3 tiny striated cavities.

*Quartz (Chalcedony).* A number of specimens were received. They were all grayish-blue in color, some were of gem quality, some were banded with calcite and pyrite. A most interesting specimen

is a pale bluish-gray chalcedony which seems to be a pseudomorph after some unknown minerals; it resembles somewhat specimens from Tresztyan, Transylvania, Hungary, where chalcedony is a pseudomorph after fluorite. In the Black River specimen, the chalcedony pseudomorphs are on 3 sides, the interior is massive pale smoky quartz.

Another interesting chalcedony, Mr. Stinger labelled "Zodac stone", in honor of the Editor's 25th year with R & M; this will be described elsewhere in the magazine.

**WEST VIRGINIA**—White masses of gypsum, 2 or 3 inches in diameter, occur in limestone at a limestone quarry at Edray, Pocahontas Co., W. Va.

**WISCONSIN** — Stilbite in sheaf-like forms are common but have you ever seen the mineral in thin platy forms? At Copper Falls Park in Mellen, Ashland Co., Wisc., brownish platy stilbite with white cleavable calcite are found in thin veins in lava flows. We are indebted for some interesting specimens to Prof. Kiril Spiroff of the Dept. of Geological Engineering, Michigan College of Mining and Technology, Houghton, Mich. Incidentally Prof. Spiroff has an article on the above occurrence which appears in this issue of R & M. Look it up.

**WYOMING** — In the Leucite Hills, located north of Superior, Sweetwater Co., Wyo., is found a volcanic rock known as "wyomingite" which is estimated to average 11% potash.

**ALASKA**—Black pebbles of cassiterite, smoothed, rounded, waterworn (known as placer tin) and coming from the tin placers of Cassiterite Creek, Lost River, Seward Peninsula, Alaska, were donated to R & M by Frank Waskey, Dillingham, Alaska. The pebbles varied from small up to  $\frac{1}{2}$  inch in diameter.

**AUSTRALIA** — Anorthoclase, as greasy, grayish translucent masses, occurs in scoria at Mount Anakie, Victoria, Australia.

**AUSTRIA**—Nice white xls of albite (pericline) have been found at Rauris, Salzburg, Austria.

**BELGIAN CONGO**—Native copper, as small masses in massive cuprite with some chrysocolla, have come from the Likasi copper mine, Katanga District, Belgian Congo, Africa.

**BERMUDA**—Mrs. Sarah Sherlock, 34 Parkway West, Bloomfield, N. J., visited the Bermuda Islands last fall where she did some collecting. From the Government quarry (limestone) on Bermuda Island (the largest and most important island of the group) she sent us a number of interesting specimens as follows:

*Aragonite*. Group of small thin brownish xls.

*Calcite (Stalactite)*. Two specimen and both brownish; one was short and stubby, the other long and slender.

*Limestone*. Banded and pale brownish.

All the above specimens fluoresce greenish and phosphoresce pale greenish under the Mineralight. See Mrs. Sherlock's article in this issue describing her trip to Bermuda.

**BRAZIL**—Nice specimens of coarse xline galena have come from Apiai, Sao Paulo, Brazil.

**CANADA**—David Grant, 32 Roseneath Gardens, Toronto 10, Ont., Canada, has made a most interesting discovery. Part of his letter, dated Oct. 11, 1951, reads as follows:

"I have just discovered perhaps the most unique deposit of titanite yet found from the mineralogical viewpoint. Rare and shiny black crystals of a size and quality never found before. Dr. Meen, of the Royal Ontario Museum, which is one of the largest museums in the world, was so impressed that he wanted to buy many of the specimens I brought back with me as my specimens were larger and finer than any the Museum possessed (the province of Ontario has the most important deposits of titanite known and the Museum has the finest of them ever collected to date).

"The Museum now has the best of my specimens but being a true collector I would not sell them—I traded them. One specimen was unique—a butterfly twin xl 5 inches in length, a variety up till

now unknown in titanite.

"If you wish I will write up a little account of the discovery for you."

His letter, dated Dec. 26, 1951, gives more information:

"About that unique pocket of black titanite xls I mentioned a few months ago. This April I shall blast open the whole fissure vein—should find some beauties up to 5 x 4 inches in loose doubly terminated single crystals. I say that these crystals are the largest single terminated black titanites in the world, if not for the whole species no matter what color. I shall place an ad in R & M to trade most of them off. I shall send you a nice selection of them, seeing that you are interested in this mineral. Outside of the loose crystals of which the largest were  $2\frac{3}{4} \times 3\frac{3}{4}$ ", and a 3 x 5" perfect butterfly twin crystal, a type never before found for this species. These large crystals are now in the Royal Ontario Museum here in Toronto. I found about 200 loose crystals of all sizes (all black), about 5 good sized (3 x 4") matrix specimens, one very large group of completely altered crystals weighing 5 lbs., and the last worth mentioning a unique mass of almost pure crystallized titanite which showed a crystal face 5" across and weighed 8 lbs.

"I specialize in the mineral species called apatite and its varieties such as mangan-apatite, etc., and try to secure specimens from all over the world. So all the specimens I collect this spring (April) shall be traded off to collectors who will answer my ad for apatite. I shall bring back 150 or more from small up to those 9 lb. masses.

"The locality for the titanite is near the village of Tory Hill in Monmouth Township, Haliburton County, Ontario, and it is located right on my 200 acres that I own."

**CUBA**—White xline masses of gypsum occur at San Adrian, Matanzas, Cuba.

**DENMARK**—Nice little amber pebbles, sometimes an inch or more in diameter, are frequently found on the beaches at many localities in Denmark.

Two good localities are Rindby, on Fano Island; and Hvide Sande near Ringkobing.

"After the tide goes out, we would walk along the beach and pick up many amber pebbles," said Dr. Svend Woge Nielsen, a young veterinary of GL, Vejlevej, Herning, Denmark, who is in America for a few months, and whom we met recently. "On the beach at Hvide Sande we find flint pebbles, also."

Ringkobing is a city in western Denmark on the Ringkobing Fjord. Fano Island is in the North Sea off the southwestern coast of Denmark.

**EGYPT** — Amphibole asbestos, long loose grayish fibers in a small box, and coming from Bir Mugor, Eastern Desert, Egypt, was donated recently to R & M by John S. Albanese, P. O. Box 536, Newark 1, N. J.

**ENGLAND** — Nice specimens of hornblende have come from Huel Unity, St. Day, Cornwall, England.

**FRANCE** — Pale brownish xls of andesine, occur in the Esterel Mts., near Cannes, Dept. of Var, southern France.

**GERMANY** — A nice pyrite nodule was received recently from Minerals Unlimited, 1724 University Ave., Berkeley 3, Calif. It was 1½ inches in diameter, dark brown in color, and its locality — Sassnitz, Island of Rugen, Baltic Sea, Germany.

Rugen, the largest island belonging to Germany, is 32 miles long, 25 miles wide, with an area of 377 sq. miles. The island is separated from the mainland of Germany (Prussia) by the Strelasund, a strait 2 miles wide. Sassnitz, on the east coast of the island, is a popular summer resort.

**IRELAND** — Cream colored stilbite in sheaf-like aggregations, sometimes with heulandite, occurs at Ballintoy, Antrim, Ireland.

**ITALY** — Colorless, xled gismondite, occurs in vugs of dark gray leucitic lava (leucitophyre) at Capo di Bove, near Rome, Italy.

**JAPAN** — The largest iron ore mine in Japan is at Kamaishi, Iwate Prefecture, Honshu Island, and is owned by the Nitetsu Mining Co. The ore is principally magnetite but contains minor quantities of hematite, chalcopyrite, bornite, pyrite, pyrrhotite, sphalerite, galena, gold, and silver. — Bureau of Mines MINERAL TRADE NOTES, Washington, D. C., August 1951, p. 12.

**KOREA** — At Kwanken near the railway station Kiho in Keisho-hokudo, smoky quartz xls are found which are often transparent and may occur with rock xls.

**MEXICO** — Some of the finest xled groups of vanadinite we have ever seen were donated to R & M by George B. Hinton, Box 806, Presidio, Texas. The vanadinite is reddish-brown in color and comes from the San Carlos lead mine at San Carlos, Chih., Mexico. A dark brown loose xl, 1½ inches long and a nice group of red wulfenite xls, both from the same mine, were also received. These are truly nice specimens.

**NORWAY** — Slender gray xls of peristerite (albite) occur at Seiland, Finnmark, Norway. Peristerite is the type that has a bluish iridescence and is often cut into gems forming one of the moonstones.

**PANAMA** — Burton E. Davis, Box 1181, Cristobal, Canal Zone, has sent R & M an interesting specimen which he collected from a basalt outcrop at the Chilibre River, near Chilibre, Panama Province, Panama. The specimen consists of tiny, white, needle-like xls of natrolite on chalcedony in cavity of basalt. Nice rock xls are also present in a larger cavity in the basalt.

**PERSIA (Iran)** — The most important occurrence of iron ore in the country is in the vicinity of Semnan where magnetite and hematite are mined.

A large deposit of red oxide of iron (hematite) is found on Hormuz Island. All the ore is exported.

Six known deposits of hematite are found on Faru Island 19 kilometers

(about 12 miles) southwest of Rasbus-taneh.

Late in January 1951 Iranian forces were reported to have reasserted Iran's sovereignty over the Persian Gulf Island Bou Musa, reputed to have rich red-iron oxide deposits.—Bureau of Mines MINERAL TRADE NOTES, Washington, D. C., July 1951, p. 14.

Hormuz (Ormuz) Island is in the Strait of Ormuz; Faru Island is in the Persian Gulf.

SCOTLAND—Colorless xls of chabazite occur in basalt at Flodigerry, Island of Skye, Inverness County, Scotland.

SOUTH AFRICA — We are indebted to Ernest M. Skea, Box 46, Pilgrims Rest, Transvaal, South Africa, for 2 nice selections of pebbles. The smaller selection comes from near the Nkana copper mine, Kitwe, Northern Rhodesia, South Africa. It consists of nice smoky quartz pebbles varying from  $\frac{1}{2}$  inch rounded, translucent, up to elongated, more or less opaque, 2 inches long; also nice brownish (ferruginous) pebbles  $\frac{1}{2}$  x 1 inch in size. His letter of Oct. 28, 1951, informs us: "I gathered these pebbles during a visit to the Copper Belt, as the Northern Rhodesian copper fields are called. The surface of the ground was strewn with the pebbles, those I have sent you being the only ones collected."

The second and larger assortment is far more interesting. It comes from the famous diamond diggings in the Vaal River at Barkly West, Griqualand West, Cape Province, South Africa. Barkly West (3,800 ft. elevation) is the oldest town in Griqualand West; it is situated on the north bank of the Vaal River and is the center of the river diggings which are scattered along both banks for a distance of about 70 miles.

Among the pebbles from the diggings are:

*Epidote.* Common as green pebbles averaging  $\frac{1}{2}$  inch in size. Many of the pebbles are oolitic — the first oolitic epidote we ever saw.

*Quartz (Agate).* Common, all finely banded and varying from tiny up to 1 x

1 $\frac{1}{2}$  inches in size. They are chiefly brown in color, but gray and green are also present. The green is due to thin strips of green epidote banded with gray chalcedony — the only epidote agate we ever saw. Tiny eye agates and tiny scenic agates are also present.

*Quartz (Basanite).* One only, a  $\frac{1}{2}$  inch black pebble.

*Quartz (Chalcedony).* Common as gray, brown, white, etc. pebbles. A peculiarity are the smoky gray translucent masses which appear to be stalactitic — at least they resemble tiny stalactites, being rounded, slender, and up to 1 inch in length. Some of these "stalactites" have a banded agate at their terminal ends.

*Quartz (Jasper).* A few jaspers noted. Some were light brown, some dark brown, and some red. From  $\frac{1}{4}$  up to  $\frac{3}{4}$  inch in size.

*Quartz (Smoky).* Nice  $\frac{1}{2}$  inch translucent pebbles;  $\frac{3}{4}$  inch opaque pebbles.

*Breccia.* One specimen, a thin dark gray quartz breccia about  $\frac{1}{2}$  inch in size.

*Quartzite.* One specimen, 1 inch dark red pebble.

There are a number of pebbles not yet identified but we can assure readers not one of them is a diamond.

The letter from Mr. Skea, dated Oct. 28, 1951, tells us:

"This lot of pebbles comes from the Vaal River diamond diggings at Barkly West. I gathered them many years ago during a few hours stay there."

**SWEDEN** — Nice xls of magnetite occur in the magnetite deposits on Taberg Mountain in Smalands, Sweden.

**TASMANIA** — Nice specimens of native gold in a hematite matrix have been found recently during the sinking of a shaft at the Edna Berryl gold mine, Tenant Creek, Tasmania.

**UGANDA** — Brown xls of limonite, pseudomorph after pyrite, occur on Kara Hill, Kashasha River, Kigezi, Uganda, East Africa. A nice loose xl from the locality was donated to R & M by John S. Albanese, P. O. Box 536, Newark 1, N. J.

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## THE AMATEUR LAPIDARY

Conducted by **COMMANDER JOHN SINKANKAS**

1107 S. Oakcrest Road, Arlington, Va.

Amateur and professional lapidaries are cordially invited to submit contributions and so make this department of interest to all.

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### *Let's Get Together — A Plea for Common Sense*

With the rise of the lapidary hobby from its early state when only a few individuals pursued the art to its present-day healthy stage which is still on the upswing, progress has been marked by a growing breach between amateur mineralogists and the cutters. Both hobbies meet in the common ground of the raw material which provides the source or starting point for each, however, the mineralogist is primarily interested in the nature of the minerals as such while the lapidary is interested in what can be made of them ornamentally. Thus one hobby is introspective and largely academic and the other mostly a manual-skill hobby akin to others like wood-carving, modeling, etc. It is possible in both hobbies to devote a great deal of scientific study to each, or not, depending on the fancy of the individual.

Enjoyment of mineral collecting is apt to increase in proportion to the knowledge gained of the minerals being collected while for cutting, literally no knowledge at all is still sufficient to permit enjoyment. The oldtime lapidary merely learned through strictly practical experience the reaction of various roughs to the cutting processes. Our more recent crop of novices are pretty much in the same boat, although some have taken the bull by the horns and have plunged into a study of mineralogy as an excellent background for lapidary work. In the main then, we can safely state that the amateur mineralogist is apt to be better founded in scientific knowledge than the cutter who is mainly interested in the general physical characters of minerals such as hardness, cleavage, refractive index, freedom from inclusions, color, etc.

The ardent mineralogist may be apt

to look with disdain upon the "pebble-polisher" who sees in every specimen only two things — will it or won't it cut. The latter may also look upon the mineral collector as a funny duck who can go into ecstasies over an almost invisible crystal. These extremists in both hobbies are few in number but unfortunately extremely vocal in their beliefs. It is here that we get the growing irritation and divergence of opinion between the two hobbies, a clamorous trend in my opinion, and one which should be checked.

As said before, our most recent crop of cutters is getting to be more and more a group of manual laborers as it were, and display less and less the scientific curiosity of their opposites in the mineral field. The latter field also has its share of persons who skim very lightly over the technical aspects of the hobby, but every hobby must begin with tyros and it is the duty of the more experienced to reveal the advantages in increasing knowledge. The old-timers in both hobbies must view their club meetings as more than mere social events or swapping sprees, they should regard them as a valuable means of indoctrinating the newcomers into the studies and skills which go into fullest enjoyment of the hobby. In lapidary work the distressing tendency of the successful to adopt a mysterious air about the secrets of their success must be stifled, while in mineralogy, the learned must give some thought in setting up courses of study for their members which should consist of reading assignments followed by review and clarification of obscure points during club meetings. Exchange of instructor personnel between mineral clubs and lapidary clubs is also indicated for purposes of mutual indoctrination. As the lapidary or gem-collector plunges

more deeply into his hobby he will find a certain amount of mineralogical information a requisite. Where better to find explanations and guidance than that available from local mineral societies? It is possible and I believe it desirable for both groups to keep in touch with each other's activities.

In this connection, I am alarmed at the latest development in the separation of mineralogists and lapidaries, which is, the formation of a federation of lapidary clubs in California. This body states that one of their aims is to increase to national scope. If this happens, it will only further subdivide an already split field. The tendency toward exclusiveness shows up in clubs and societies limiting their memberships and then forming further exclusive groups which have even narrower interests.

"Here's to Boston, the land of the Bean  
and the Cod,  
Where the Lowells speak only to the  
Cabots—  
And the Cabots only to God."

Although this verse was penned by some unknown individual about Boston, it can now be applied freely to the sort of snobbish exclusion which is entering the hobby fields of immediate concern to us.

It seems incredible that two groups of hobbyists both dealing with the same raw materials can lose sight of inescapable common interests. There is too much to be gained by joining forces and too much to be lost by separation. The mineralogist can help the lapidary and vice versa. Each one in order to become well-rounded in his individual field needs to know a considerable amount of the other's knowledge. Narrowness of interests is a hallmark of a narrow mind. It leads to conceit, intolerance, and finally to strife of some sort. Of the truly authoritative earth scientists that I have met, the single greatest characteristic noted is their unfailing display of interest in all aspects of the game. They are smart enough to know that praise and encouragement are all for the good of earth sciences as a whole, and that the scientist, technician, and the manual

worker are all essential to its further exploitation.

What can be done to better our relations and keep them cordial? I shall try to show the areas of common interest and the areas of violent difference with the hope that differing views can be reconciled while common views can be strengthened.

Characteristically, the narrow mineralogical viewpoint deplores and condemns the destruction of excellent mineral specimens whether it be by miners or by cutters. What a common topic among collectors and how bitterly it is hashed over! According to this viewpoint, the N. J. Zinc Co. would be required to operate their mines at Franklin and Ogdensburg with the primary purpose of conserving specimens and secondarily, to make the workings profitable. This viewpoint is obviously ridiculous and impracticable and no amount of discussion is going to swerve the miners from trying to run the mines in the most efficient manner possible, which, it goes without saying, does not include holding open house for every mineral collector that shows up. Neither can the commercial lapidary be impressed by the need to conserve specimens. This artisan is in the cutting business to make money and if aesthetic feelings about this raw material rise in his breast, it is purely coincidental. He too does not care for specimens *per se* unless they appear to be more profitably sold that way than as cut stones. It is a well known fact that miners and commercial lapidaries have had excellent specimen material slip through their hands because they were ignorant of its value to science. It is in this area that all of us should take steps to establish better relations which means education and not condemnation. Mining personnel should be educated in why specimens are so desirable and commercial gem rough houses likewise. They should be shown the need for increased knowledge and the benefits which have accrued to the mining industry from the advancements made in the fields of earth sciences. This is admittedly difficult to

do but it is not impossible by a long shot. Each collector and cutter should act as an ambassador of good will in his relations with purely commercial activities. There is an appalling lack of knowledge about the raw material which is the stock in trade of such companies, and if the ardent amateurs don't take it upon themselves to help out, who will?

Mineral collectors should realize fully the potential behind commercial rough gem houses to furnish specimens. Take the pegmatites of Brazil for example, I have it on good authority from various persons who have been there that the dumps of those mines are tremendous sources of just the sort of material the amateur mineralogist wants, yet specimens mined are assessed on the spot for gem value only and if they are not gem quality, off to the dump they go. Commercial gem houses have buyers down there all the time and if they were educated in what to look for they could come back not only with gem material but also excellent specimen material. As it is they admit they have no entree in the specimen field and are therefore hesitant to load themselves down with material of doubtful saleability. You mineral collectors are missing a wonderful bet here and it's to your advantage to go to these firms and make known your wants.

On the other side of the picture is the lapidary who is similarly remiss in that he doesn't get around to visiting the specimen houses who sell nothing but specimen material and no lapidary rough. Where would you advanced faceters get some of the rare materials like beryllonite, pollucite, brazilianite, etc., if it weren't for these specimen dealers? Certainly they don't sell rough as such but believe me they often got those little tiny fragments of the rare stuff which leave the mineral collector cold, but are just what you have been looking for.

Now that we have spoken of the commercials, let's talk in the same vein about you and I, the amateurs. What can we do in exchange visits to commercial firms we can do in exchange visits between amateur mineralogists and amateur lapi-

daries. Very often both have materials kicking around which are just taking up space because they fail to meet the standards required of them, yet from the viewpoint of the other they may have great value. Another important consideration also is that even if the lapidary doesn't have any specimens to offer the mineral collector in exchange, he does have the manual skill and know-how which the latter may find very useful at times. I saw a splendid micromount the other day of rock crystal enclosing small deep-red rutile crystals. The collector had the specimen polished on several sides not for ornamental purposes but to create a clear window into the interior which revealed the otherwise hidden beauty of the inclusions. It took lapidary work to do this. Other lapidary services are available also in exchange for such raw material which the specimen collector can part with. Thus there is something valuable which each can offer the other.

Here are a few concrete suggestions to summarize the discussion:

1. Mineralogists should familiarize themselves with the various lapidary processes particularly as they pertain to the field of determinative mineralogy.
2. Mineralogists should learn to recognize the characteristics of good cutting material.
3. Mineralogists should learn to recognize the minerals which are on the cutting list, both the common and the rare, and save same for exchange material.
4. Lapidaries should study basic mineralogy in order to broaden their own appreciation of the material they deal with and the problems and desires of their opposites in the field of mineralogy.
5. Lapidaries should study intensively the physical characteristics of the minerals habitually used for cutting in order to make themselves more skillful in its processing.
6. Lapidaries must be continually alert to assess gem rough for greater value as specimen material rather than as cutting material and save out accordingly for exchange later.

7. Mineral collectors should visit gem rough dealers and lapidaries should visit specimen dealers. Such visits and resulting purchases will encourage those dealers to broaden their purchases of raw material.
8. Mineral collectors and lapidaries should frequently exchange visits for mutual appreciation and benefit.
9. Both types of clubs and societies should have exchange lecturers scheduled for future meetings to further mutual understanding and education.
10. Both types of clubs should not take any further steps to separate but should take steps to become more closely integrated.

Let's get together folks, we all love the same things and basically are seeking the same goals. Let's put our shoulders to the same side of the wheel and not on the opposite ends.

#### SHOP HINTS

**DYEING AGATE.** Tried dyeing agate the other day with a great deal of success. Of course it was only the sugar solution-sulphuric acid routine for making browns and blacks. I took a wide-mouthed jar and half-filled it with a sugar solution (several tablespoonfuls of cane sugar to a half cup of water) and dumped in all sorts of agate odds and ends I had around the shop. Naturally being impatient to see how I was making out I didn't let it sit for more than a few days before taking out the slabs and putting them in the concentrated sulfuric acid. Even this short period of time showed that the process was working OK so I put it all back for longer soaking in the sugar, a very important point as you will see later.

The materials used are easily obtainable while the process involves no work other than just waiting. The acid can be bought from a drug store who can order it if they don't have it in stock. Buy a pound jar of it which will give you enough to cover fair sized slabs (cost about \$1.30). The jar you put the acid in should be covered with a tea-cup or saucer to seal it, anything else is liable to get eaten

up. Can't leave it open either because concentrated sulfuric absorbs water from the atmosphere and automatically dilutes itself.

You can't tell off-hand what agate will soak up the sugar solution so you just have to try and see. Slabs should be carefully cleaned of any traces of grease or oil by boiling in soda or a good grease-cleaning detergent. This cleansing will allow the sugar to penetrate into the pores for an even distribution of color. Slabs should be rather thin for best results, or you can preform cabs and soak those. Some agate takes up the sugar quickly and some takes it up very slowly but the whole process can be repeated as many times as you want if the color is not to your satisfaction. Several weeks is necessary in the sugar solution for fair results and then several more in the acid. Pure onyx blacks may require several months.

**Caution:** The acid will give bad burns to any organic matter including your own skin. Read the bottle label for directions and antidotes. Wipe off all slabs coming from the sugar solution so as to prevent unnecessary dilution of the acid and sputtering. When the slabs are darkened enough, soak them for several days in changes of water to remove the last traces of free acid before putting them anywhere.

#### Hand-Rubbing Malachite

Do you have trouble with malachite? Do your friends sneer and turn away when you trot out your malachite cabs? Try this simple treatment if you want to become the life of the malachite bragging party.

After you have your malachite well sanded, preferably with 600 wet or dry cloth used wet, polish as usual on a leather buff with chrome oxide. When the piece looks as good as it's going to get, polish it by hand using a small square of clean leather and chrome oxide. Soak the leather pad, wring it out until it's just damp and dip lightly in chrome oxide — just a touch. Then rub it over the polishing area and you will be amazed at the fine glassy polish

which will come up. This technique was used for a piece of Belgian Congo malachite about 5" x 5" which was ground down in hollows to reveal the best pattern. The malachite was full of light and dark-colored areas and as you know, the light-colored stuff is pretty hard to shine up. In spite of this the hand-rubbing process brought it up to the point where it looked like it has been lacquered. It's work but worth it!

#### WOODEN LAPS

Wood has been used since ancient times for polishing gems. The old-timers used it not because they didn't have any leather or felt but because for certain polishing processes it can't be beat. Felt is OK for agate and some others while leather is fine for undercutting material, but when you have stuff like dumortierite, unakite, cuprite, rhodonite, thulite, etc., try an ordinary wood lap for a really slick job which will go faster than leather.

The other day I got ready to polish a chrysoberyl catseye and a giralso Montana sapphire, so after giving them the final sanding treatment, I broke out a small lap made of Honduras mahogany whose surface had a smidgin of diamond dust in it. With no trouble at all I got up a beautiful brilliant polish on both specimens. For these hard cabs, use number 7 diamond dust (about 2 microns). If you have softer stuff like the undercutters I mentioned before, use any standard polishing powder but try Linde A first before trying something else.

How do you make the lap? Well — first get some wood of the type that's called 'diffuse porous,' that is, the pores are sprinkled evenly thru the wood and don't bunch up in winter and summer growth rings. Here's some: mahogany, holly, basswood, poplar (whitewood), maple, teak, cherry, black walnut, butternut, etc. As long as the wood has an even texture it's OK. Don't use wood like yellow pine, it will be like trying to polish on a washboard. Next, turn the wood slabs in a lathe so that the wide sides of the lap have the edge grain

and edge of the lap has the long grain. You use the end grain for polishing. Naturally you should try to get the lap as parallel-faced as possible and it ought to be an inch thick for strength. If you are going to use it for faceting, an excellent use for wood laps incidentally, be sure to take special pains in facing it off. Do not use any kind of abrasive cloth in smoothing up the wood, just be sure the lathe tools are razor sharp before you take the final cuts. You can make up several laps for different polishing agents and if you wish, cabochon-shaped grooves of different sizes can be turned in the face to accomodate various sizes of cabs.

I mentioned that the face of the lap must be end-grain, well it really doesn't have to be, but it's best. You can actually take a hunk of orange crate and do pretty well with it if you want to. The beauty of the end-grain is its smoothness and ability to remain true. It doesn't crush and the pores act like the anti-scratch grooves on metal laps.

#### FORTHCOMING ATTRACTIONS

A few months ago I cut a 578 carat aquamarine for the National Museum, supposed to be the largest one processed in the United States. If you get around Washington, D. C., you can see it in the Roebling Collection in the Mineral Hall. I've got an article written up on it some place around the house and if I can get a good photo of it, I'll run it in the next issue. Also processed a synthetic quartz for the Museum which is in their synthetic case. Don't ask for rough synthetic quartz because the cost of making it by Bell Tel. and Brush Development runs pretty high and everyone they've made is snapped up by research people and museums.

#### WANTED

I'd like to get some shop hints from readers of this column and photos and diagrams. So don't be bashful, send them in.

## THE MICRO-MOUNTER

Conducted by LEO N. YEDLIN  
P. O. Box 223, Wallingford, Conn.

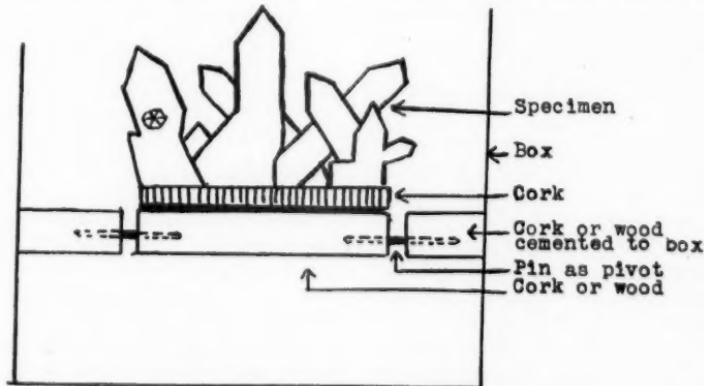
We have received in the past some fine m/m from W. R. Willis, of Colorado Springs, Colo. Among these have been several specimens of quartz, showing the basal pinacoid, or "C" face, from 2 separate places. One locality, Ruby Mt., Colorado, shows the quartz as stubby xls in rhyolite, and is the same type of material in which topaz, bixbyite and red beryl are found — from Thomas Range, Utah. We suggest you examine any such specimens you have for the quartz in the vugs. We have a feeling that the "C" face is not uncommon. It occurs as a minute bright triangle at the apex of the rhombohedral termination. Use about 36 to 48 magnifications and a strong light, moving the specimen about to get the reflection. The other material comes from Wildcat Mt., Great Salt Lake Desert, associated with fluorite. Let Mr. Willis tell you about this stuff.

These "C" faces must have a very different history and cause from those in the rhyolite of Ruby Mt., and the Thomas Range. These form the apex of three very narrow pyramidal faces. The material was collected by Edwin Over, and I found

the 'C' faces when he gave it to me in 1948. Several things have taken place here as shown by 2 generations of the fluorite, the occurrence of the base on the quartz and in some cases by the presence of sceptre quartz. There occurs, too, small tetrahedra, blue internally, which may be pseudomorphs after tetrahedrite or tennantite."

Our interest was further aroused by the mount Mr. Willis sent to us. He calls it a double rotating mount. The specimen is fastened to a cork in the usual way, and this, in turn, is cemented to a rotating cylinder, of cork or balsa wood, which moves freely on a pivot. Instead of describing it, let's check the sketch. Note how all sides of the mineral (except the base) can be examined. You need not worry about which surface of a specimen to exhibit. Show 'em all.

Speaking of m/m boxes, we noted an ad in ROCKS AND MINERALS, Sept.-Oct. 1951 issue, page 553, by Robert Lobel, of Daly City, California. We have a sample of this clear plastic box and it's a honey. Somewhat larger than those now on the market (a full 1" x 1") it is precision



End View. Double rotation mount.

made and shows no surface disfigurement due to contact with the moulding equipment. The top fits perfectly. We suggest you look these up if you're in the market.

We attended a trip recently of members of the Connecticut Valley Mineral Club as guest of Joe Rapalus and Jack Kitson, of Easthampton, Mass. Visited the old lead and zinc mines at Loudville, Mass., and vicinity, and again obtained fine micro specimens of pyromorphite, wulfenite, cerussite and malachite, with hand specimens of galena, sphalerite and pyrite. Had the pleasure of meeting Otto Bartels, Ray Robert, H. M. Federhen and a host of others. This Connecticut Valley Club is a good outfit.

More recently to Franklin, N. J., at a joint field trip of 7 clubs. Never before have we seen so many people crawling over a rock pile. The group combed the dumps of the old Buckwheat Mine, where masses of fluorescent calcite, with willemite, franklinite and some zincite were common, and where microcline, magnetite, apatite, rhodonite, rhodochrosite, hardystonite, schefferite, fluorite, pyrite and dolomite were easily available. A few of us visited the old Parker dump, and came away, additionally, with hancockite, axinite, caswellite, garnet, blue tarnished franklinite, and manganophyllite. The hancockite is a "must" to a m/m collector. Smash up the usual massive dull brick-red material and tiny vugs are encountered. These are beautiful under the 'scope. Rich blood-red translucent xls of hancockite, with an occasional yellow axinite, make this one of Franklin's choice minerals.

Our thanks to Horace Fletcher of Franklin, N. J. We dropped in on him out of a clear sky, unknown, and he showed tremendous hospitality. We examined his extensive fluorescent collection, were the recipient of part of it, and were introduced to several local collectors. From them we obtained:

1. Zincite, xld, with white tufts of hairlike xls of willemite in vugs.
2. A mass of friedelite, loaded with cavities showing bright yellow dodecahed-

rons of garnet, with implanted xls of pink transparent rhodonite.

3. A 1" x 2" piece of willemite, at one end of which is a hollow of pale pink needle xls of hodgkinsonite.

4. A mass of pitted axinite, with several rough clinohedrite xls disseminated throughout.

That Buckwheat dump at Franklin merits a good deal of investigation. Much dolomitic limestone is scattered about, some of which is decidedly porous in character. Sam Gordon, in the Sept.-Oct. 1951 issue of ROCKS AND MINERALS (page 510) tells of a recent find of brookite in this rock. We worked over the stuff and came up with clear dolomite xls, twinned sphalerite, beautiful blue tarnished pyrites, albite, quartz and hemimorphite (?) in sheaves of flattened xls. On a previous occasion we turned up millerite in bronzy needles.

These notes will be ended for this issue with a report from Paul Desautels, our constant correspondent. Now there is an active collector.

"Dear Lee: Here is a report of my spring's work in the field of micro-mineralogy. It's not that I've done so much, but what I've done I've enjoyed tremendously. Here goes.

WOOD'S CHROME MINE, Texas, Lancaster Co., Pa. The newly formed Baltimore Mineral Society took the old locality in on a field trip. As a micro mineralogist (Ed. note. He refers to the type of collecting he does, and not to his size.) I must report a practically dead region for quality specimens. That's an unusual state of affairs, I know, but all I found were some poor chromite xls, and a trace of indifferent xls of hydro-magnesite.

GAP NICKEL MINES, Lancaster Co., Pa. The society visited this old-timer, too, under the guidance of Mr. Leonard J. Duersmith, of Franklin & Marshall College. For the m/m collector—nil. For the general collector, traces of pyrite, pentlandite, millerite, all massive. The dumps are a mighty wet place to be in when it's raining.

FRANKLIN & MARSHALL COLLEGE MUSEUM, Lancaster Co., Pa. Mr. Duersmith, the perfect host, asked us over to see the collection. We enjoyed this one, and we enjoyed working over the pile of material put out for us to take home. My wife noticed a few small cavities in some galena from Lancaster Co., and I took along a few pieces just in case. I'll describe what I found below.

SMITHSONIAN INSTITUTE. I took a class from school over to the museum to see the historical geology collection, and, of course, the minerals. I don't think the group got much instruction, for their instructor promptly turned them loose and became engrossed in the cases of phosphates, arsenates, etc. What a treat!

The spring didn't add too much to the collection, but there were a few things of note.

1. The galena mentioned above was somewhat oxidized, as suspected, and the little cavities contained many tiny xls of anglesite. This is a difficult mineral to get in m/m size under the best of conditions, but some of the stubby xls were perfectly developed, showing little or no distortion of the basic orthorhombic forms. When I find out about the locality and get enough material to do some further study I'll report more fully.

2. I managed to get hold of a specimen of clinohedrite from Franklin, N. J., that showed definite crystallization. Unfortunately the stuff was in that hard massive hancockite-axinite matrix which Palache mentions in his Franklin paper (Bull. 180). The piece started out about 2" x 3" and after some heartbreaking disasters finally produced ONE good mount, with several sharp, clear xls of the clinohedrite, and ONE mount with some fine clove brown axinite xls (as contrasted with the usual yellow). These brown axinites are associated with fine deep red-brown hancockite xls. The clinohedrites are beautifully complex. One need only to refer to Palache's drawings on page 107 to see what a fine problem in orientation they offer. I think I've worked mine out pretty well ac-

cording to the proper monoclinic-domatic symmetry. They show forms quite like figure 159 on page 107. The forms b(010) and m(110) and r(331) and q(t11) seem to dominate, and there is a suggestion of p and e.

3. Along with the clinohedrite I got a specimen of the franklinite described by Palache on page 45 at the bottom. It is the material discovered by Mr. McGovern (for whom McGovernite was named) in 1913 and the specimen was purchased when his collection was sold. It's loaded with brilliant sharp franklinite xls. These show a definite red color through thin splinters. The remarkable fact is that not one of the hundreds of xls is of the usual octahedral habit. The forms, just as Palache described them, are the cube, tetrahexahedron and octahedron. In these specimens none of the forms is ever found alone. One series shows the cube and tetrahex together, with the cube dominating in some, and the tetrahex in others. Another series shows all three forms together in various stages of development. They are a beautiful sight to see with their brilliant black metallic lustre on a light grey dolomite background. Palache mentioned the excellent willemite xls and the talc rosettes in association. I've been able to find both in this material and the willemites are the finest I now have. Along with these is a scattering of minute yellow-amber xls which I take to be barite. I have found, too, in this material one tiny rosette of hemimorphite. That wasn't mentioned in the paper and I can appreciate why if all I found was one rosette in the whole chunk.

4. I finally got a chance to work on some cacoxenite from Giessen, Germany, which I had picked up a while back. It turned out to be the best stuff I'd ever seen anywhere. The shaly matrix split open along seams in which the radiated globules had opportunity to develop fully. The golden cacoxenite balls are scattered over a dark brown rock, and in some cases are perched daintily on fine xls of red beraunite. Excellent for cacoxenite alone, the specimens are just

superb when associated with the beraunite. Not being able to decide which to mount, I kept them all!

5. A specimen of cahnite on rhodonite came under the hammer next. Cahnite xls are so rare anyway that I was pleased to get this piece. As it turned out the cahnites were poor and rounded but the rhodonite was fine. The only micro rhodonite I had ever seen were the bright pink xls associated with the yellow garnet. The ones I've just worked on are much larger, still sharp and transparent, and are on a rhodonite matrix. The xls have a relatively short brachy axis giving them a tabular appearance, but there are several forms present. Combinations of prism, pinacoid and pyramid are evident, with the a and b pinacoids and the prisms

elongated. This accounts for the tabular aspect of the crystals.

6. Miscellaneous. I've mounted fine specimens of odds and ends of things, such as quartz, Franklin, N. J.; tourmaline, Maine; manganite and barite, Virginia; epidote and byssolite, Goose Creek, Virginia; leucoxalcite, Pershing Co., Nevada. And that's about all I've been able to do."

The Micro-mounter hereby expresses sympathy for Paul Desautels. At the beginning of his letter he states that he hasn't been able to do much in the field of mineralogy. To ask a question we're certain every reader will want to know: "Just what, Paul, do you consider a full and successful collecting season . . .?"

## LOOKING BACK - - - -

Twenty-Five Years Ago in ROCKS AND MINERALS

March, 1927, issue

*The Agate*, by A. J. Harstad, pp. 3-5. (Mr. Harstad, one of Montana's most colorful figures in mineralogical circles, lost his life on Thurs., Sept. 5, 1946, when a car he was driving plunged off the highway 9 miles east of Bonners Ferry, Idaho, and toppled down a 400-foot embankment into the Moyle River.

*The Black Mountain Mica Mine*, by Charles F. Marble, p. 6. Mr. Marble, one of Maine's most colorful mineral collectors and gem cutters, is still with us. He had a short article in our last issue (Nov.-Dec. 1951, p. 623).

*Notes and News of Minerals of the Rarer Elements*, by O. Ivan Lee, pp. 6-8. Not only is Mr. Lee still with us, but he is one of the best known mineral collectors in New York City and its environs. He is especially well known to members of the New York Mineralogical Club because Mr. Lee is the Secretary of this, the oldest mineral club in the country.

*The Sluice Box*, by A. Riffle, pp. 8-9. A. Riffle was the pen name for A. J. Harstad (see above). In this column appeared little bits of wisdom, humor,

suggestions, nonsense, etc. One item from this issue is "Blessed indeed is the mineral collector whose wife shares his enthusiasm for his hobby".

*The Geology of the District of Columbia*, Part 2, by Elra C. Palmer, pp. 10-11. Mr. Palmer was a subscriber up to 1946.

*Identification of Minerals*, Part 3, pp. 11-13. First principles of chemistry.

*Dorothy's Great Idea*, by Pearl Hamilton Elliott, pp. 14-16. We thought a little fiction might go over good, but it didn't and it was never repeated.

*Paleontology Department*, Conducted by Benjamin T. Diamond, pp. 16-18. For a number of issues Mr. Diamond conducted this department in a most thorough manner, but somehow fossils didn't go over with our readers.

*Home of the World's Largest Deposit of Cyanite*, by B. F. Seagle, Jr., pp. 19-22. An interesting article about a cyanite mountain located 2 miles from Burnsville, Yancy County, N. C.

**MINERAL SHOPPER'S GUIDE**

Conducted by CHARLES A. THOMAS

706 Church Street, Royersford, Pa.

Advertisers are invited to send notes or samples of their products. This service is free.

It must be wonderful to be able to roam in the great Southwest and collect minerals. Does any dealer from those parts have any Arizona sunsets to exchange for some of our beautiful Eastern stalactitic (frozen)  $H_2O$ ? Christmas in the North and East, according to the holiday cards, is snowtime. The mineral, water, is stalactitic form, is depicted as hanging from eyes and noses. The latter effect is the reason why so many Eastern collectors stay home this time of year. It gives them a chance to catch up on their micromounts or cut and polish some of the loot they found or bought from dealers along that vacation route.

Perhaps the enforced (?) indoor activities during the Northern and Eastern winter months account for the reason why there are so many microscopists this side of Mandan. However, we know that quite a few lens gazers and other mineral phase hobbyists, are fast slipping toward the fascinating cutting and polishing hobby. The M.S.G. is neutral, insofar as a controversy is concerned as to whether a fine specimen should be sliced or cabbed or faceted. Simply stated, we love mineralogy no matter what. A question was put to me by a wag. He wanted to know that if all the cabochons and polished slices made during 1951 were piled in one pile and those made and piled in 1952, how large was the pile from 1950? If the trend means anything the new pile should double that of any other in recent years.

The quality of cab and faceting material is still superb. Cabinet specimens are still superb. It is true that the one cuttable agate or some other material as 1:1000 or 1:10,000 is just as rare today as ever, but this rarity does not prevent intense interest in the cutting hobby. Good material such as the commercial firms work up is certainly available. They cannot afford to waste time on inferior stone and must have material which at

least comes in the one in one thousand class. Such material is being offered in the ads placed in ROCKS AND MINERALS. Study the ads placed by Allan Caplan of New York City, and you will understand Enthusiasts who like to work up fine material should be interested in gem material offered by this company. There are dozens of ads such as this one to choose from. Try them and come up with something really good.

Mr. A. L. Inglesby, a collectors' collector and dealer, has the fruits of much trekking at your command. Utah's bright colored agate is but one of many which he is proudly offering to cutters. His ads are always interesting. Take a peek, select and order. Mr. Inglesby has not bothered to haul back any junkite from his collecting jaunt of the past summer.

The world, in general, has always been fond of Persian turquoise. It is a fine blue and heavier than that from other world sources. If you should like to have some to work up and compare with our own turquoise, it may be obtained from a turquoise specialist, Mr. A. Ouskouian of Meshed, Iran. The M.S.G. has always believed that there are really only three types of actually foreign minerals. When the moon kissed the earth millions or billions of years ago (not definitely proved), some pieces were left behind, to be gathered in certain parts of the world. Meteorites are still falling in sizes large enough to withstand the burning up in our atmosphere and are still being slowly but surely found. And, last but not the least, the small foreign body that finds its way into the eye of the unwary rock buster. These are foreign minerals. These and all others belong to the mineral collectors of the world.

Cutting material seems to be the theme, so far in this script. Speaking of cutting, Raymond Conover, whose ads have steadily appeared in ROCK AND MINERALS, offers to slice material for you. Look

up his ad and get in touch with him.

By all means see the current issue ad presented by Technicraft. It reads something like what the most wishful collector would hope to see in his workshop. Good olivine is so pretty and their green fluorite are but two items for the cutter who likes greenish material. Sodalite in fine blue is another one. The beautiful blue and fine sheen of sodalite is so often taken for granted. Sodalite, h-mmm, pretty stuff. If you have never cabbed a blue beauty such as sodalite, send Technicraft an order now.

We know of a certain Boy Scout Troop who has received a gift of A. J. Gude's perfectly executed paper cutout models of crystal forms. What a project for study! Pardon us for repeating the name of Gude so often in this column. His painstaking work is monumental and deserves all the help we can give him. The reprints are so cheap, yet so useful to the study of crystallography. His ads appear regularly in these pages.

One often reads, in the mineralogical literature, that micro crystals and micro cavities lined with assorted crystals are more perfectly beautiful and more spectacular than larger crystals and groups of crystals. Anyone who has looked at a fine micro collection will appreciate this as a fact. However, small, yet too large for micromounts, are the single and groups of perfect crystals which present themselves so beautifully, so that they deserve a niche in our displays of cabinet specimens. How to do this displaying of small mineralogical specimens is a problem which has been worked out admirably by many collectors, but the neatest and far more clever way is the Cal-O-Mount way. Tiny plastic stands advertised by Mr. Cal O. Gettings are so reasonable in price . . . \$2.00 for 25 neat little stands for those perfect though small crystals and groups.

Mineralogical students who have grown a few of their own synthetic crystals, usually chemical or from mineral solutions, will admit a natural interest in the synthetic gem stones. We cannot help but call your attention to

recent ads placed by the Henry Schwab Lapidary of New York City. Their unset beauties such as sapphires and titania stones are tops in all excepting the price. The prices you will see in their ad are no printers' mistake. We are intrigued; how about you? These are the best that science can produce.

In case the reader is new to ROCKS AND MINERALS and mineralogy in general, we would like to point out that Mr. E. M. Gunnell is one of the foremost crystal dealers and experts in the U. S. A. Just how he assembles so many varied and perfect crystals — natural ones and so clean and sharp — is his secret. The prices asked for these superb sets of actual crystals are far below the real value. The knowhow and the work attached to obtaining these assemblies is simply disregarded. From our experience, we know positively, that such crystals are worth far more in each individual case. The charges for the sets amount to a wholesale price. We urge crystal lovers to take advantage of Mr. Gunnell's offer without delay.

It is a pleasure to see Arthur and Lucille Sanger's ads again. They must have been busier than the Indian arrowhead makers during the great tribal wars pre-Columbo. They have sliced enough blanks for cabs and such to enable them to offer 50 blanks for \$3.50. Anyone who has not thrilled to the Sanger blanks will have something to look forward to. We have seen many of them and not one was ever discarded for reasons of inferior interest or quality. Get 'em now and see.

Friends of the M.S.G. who know him well enough to ask him who he thinks he is to run this column . . . and get away with it and still know that we are still good friends, had better watch out. We appreciate the need for accuracy when it comes to the more difficult determination of the unknown gem or mineral specimen and we can now state that we are more thoroughly equipped now than ever to help in the determination of some tougher problems. We certainly do not set ourselves up as experts nor

do we have the time to go into the absorbing study of mineral analysis. But, we do now have a set of the Cargille Heavy Liquids which will most certainly make density determination much more certain, thereby simplifying and with ease, one of the first important steps in the identification of minerals and crystals of minerals. For instance; we received from a very dear friend, a nice chunk of massive pale blue topaz (Maine) with a quite large question mark on the label. The raised eyebrow asked, "Is it, or is it ain't topaz?" We wrote that we were positive it was (is) topaz. Since using the Cargille Heavy Liquide to determine the mass of this material, we are more than merely convinced that it is topaz, though it does seem to have an impurity that pure crystal topaz would not be likely to have, giving it a slightly less density than that normally accepted for purer topaz, namely 3.4-3.6.

We want to thank Mr. Cargille for sending us this most generous set of heavy liquids and we wish to stress the point that these liquids, many of which are clear fluids as well as the heavier opaque liquids, are easy to use and accurate if the simply presented directions are used. No heavy liquids should be used, in any case, in a chilly room. Used correctly in a room temperature of from 70 to 75 degrees should give most accurate results with ease. All seriously minded mineral collectors should want some or all of these efficient heavy liquids to help in the determination of density of lookalikes . . . especially when a scratch test is difficult though other tests can be more definitely made. Gem collectors, should be most especially interested in the Cargille Heavy Liquids. See that ad.

It is felt that an appeal should be made to those who have discovered some sort of a bonanza, whether it may be fluorescent material, fine micromounts, interesting ores, crystals, gem or semi-precious gem material, or whatever, to market their finds, thereby making fine material available to other collectors. Exchanging is slow and tedious, though

fascinating to be sure. That good material you may have found in quality should find its way more quickly into the collections waiting for them all over the land. If you have a doubt as to its acceptability to the trade, the M.S.G. will help you determine this as we have done in the past. Just send a small sample to him . . . the service is free. If you want us to help you brag a little, we will be glad to do so if your material warrants such. We cannot help but remember the many fine clean samples of specimens sent us by established dealers during this past year. Perhaps a few stray duds were sent but the reader was not told of this, though the sender was advised of the inferior quarily . . . a saving to him and the buyer. Happily, not many such specimens were received and in each rare case, the dealer was glad to know it.

As to the foregoing, concerning the marketing of mineral specimens, we may take a leaf from our own notebook as an illustration. Several years ago, the M.S.G. discovered a very highly fluorescent slag which is every bit as strongly fluorescent as is wernerite under short wave U.V. (wernerite, is however, much brighter under long wave). It also compares favorably with Valyermo, California, apatite . . . is much more orange than any sphalerite. Its thermoluminescent properties is of great interest and the material held a long dim afterglow as well. It was found that a certain method could be used to fashion spheres from the slag. Large quantities for friends and exchangers were stored away in our cellar. Even exquisite micro crystals of selenite were noted in certain cavities. But there just were not enough exchangers or micro fiends or sphere cutters or fluorescent addicts in our datebook to help us get rid of all of that fluorescent slag. We contacted a few dealers, ran an ad and bingo, we got rid of three cellars full of this one item alone. Nearly a ton of zinciferous aragonite was distributed similarly. It is the most unusual of fluorescent and phosphorescent zinc ores other than Franklin material and much brighter than hydrozincite. The

latter is extremely scarce now, though a bonanza while it lasted. Perhaps you, too, have such material to advertise in ROCKS AND MINERALS. If you do not care to profit financially, then for goshshakes run an ad offering to exchange it if you will. Lights under bushels are being hid by the bushels in this country. Concerning the plug about the slag and the zinc ore, mentioned above . . . we are not prepared to again offer this material just yet and if we do, it may be through any one or several reliable dealers (those who advertise in ROCKS AND MINERALS, of course). It still is not a plug . . . too busy with this column and other matters such as making a living at our chosen, noose-around-the-neck-nose to-grindstone (ah, stone) JOB.

Brother reader, if you cannot locate that mineral specimen, take a closer look at the ads in ROCKS AND MINERALS. If Ward's do not have it (and golly, they must) there's Schortmanns', Ford's, Minerals Unlimited (a que?), Grieger's, Gritzner's, Plummers, The Bradleys and a gosh awful array of swell people to write to.

This last line is a must. A friend of ours took a long trek to the great West, this summer. We had advised him, though he was not a mineral collector, to visit, just for fun and interest, a mineral dealer. He did, though he forgot just who we suggested that he drop in on. He even forgot that we mentioned dropping in on a mineral dealer. While in Tucson, he, his wife and daughter (what a gal) became acquainted with one of our dealer friends, the owner of the Mission Curio Mart. It's a small world, as Imogene Coca and Sid Caesar are often caught saying in unison. When Joe Thomas (no relation and why do we so quickly say this, Joe?) returned from Tucson, he had with him some mineral loot, bought, borrowed or stolen from the Mission Curio Mart . . . and gave it to us. Attention Mr. Record: what say you about Joe . . . great guy, eh? We believe you have Joe enthused about a certain phase of mineralogy, namely saw-

ing! Nice work . . . this convert stuff, we mean . . . sawing too, for that matter . . . and can Joe solve problems, mechanical, that is!

#### MANY MINERALS EXHIBITED AT ARIZONA STATE FAIR

At the Arizona State Fair, held in Phoenix, Ariz., November 3-12 inclusive, 1951, over two thousand specimens were entered in competition by eighty-one exhibitors. Thirteen entries were in the Arizona Grade School Contest for the Phelps Dodge Trophy which was won for the second time by the Ajo Public Schools. Sixteen grade school children entered standard thumbnail boxes. This is the first year any individual exhibits were accepted from grade school children and was limited to the one class. Eleven high school students entered cabinet specimens and thumbnails or both. The Judges were Jack Streeter, Dorothy Craig and Dr. C. D. Woodhouse of Santa Barbara College.

In addition to the material submitted in competition approximately one thousand specimens were entered for display only. Replicas of the fifteen world's most famous diamonds with a set of nine glass models showing the principal stages in diamond cutting were loaned by Rosensweig's, Phoenix jewelers. Photographs showing the mining and recovery of diamonds at the mines were supplemented by a suite of the typical rock formations from the Kimberly Mine. In an adjoining case synthetic gems,—boules to finished stones, were displayed.

The American Zinc Institute provided a large wall display which was supplemented by a case of zinc minerals and concentrator products. Arizona now ranks second in the production of zinc in the whole United States.

The U. S. Bureau of Mines and the Arizona Bureau of Mines participated in the show. The U. S. Bureau of Mines demonstrated roof-bolting which is supplanting the more costly methods of mine supports. The Arizona Bureau of Mines demonstrated flotation of copper ores and provided charts showing the total metal production, gold, silver, copper, lead and zinc from 1877 through 1950 with other charts to show the services rendered to the Arizona mining industry by the Bureau.

Fred Bitner of Scottsdale showed a complete line of lapidary equipment in operation throughout each day. Members of the Mineralogical Society were in attendance every day to act as guides to the visitors, a service not provided in any other department on the Fair Grounds.

## SOME SUGGESTIONS ON EXCHANGING MINERALS

The following is submitted in hope that the confusion that exists among many collectors exchanging specimens can be minimized.

In the past ROCKS AND MINERALS probably had many complaints from unhappy collectors who had received some "choice" garden rocks or badly mutilated culls in exchange for some first class minerals. I know the magazine has battled this trouble by asking for references from advertisers in the exchange column and also by helpful comment in various articles and editorials.

I believe the solution to the problem is to initiate and publish a basic set of rules and ethics to be honored when exchanging minerals. The ideal spot for the proposed rules would be at the top of the exchange column in each issue of R & M.

Leading mineralogists for the past century have pointed out that the exchanging of mineral specimens and related information greatly increases both the collectors knowledge and collection. In view of this, and the many thousands of collectors throughout the world today, there should be far more activity in exchanging minerals than exists at the present time. I also believe that increased interest in trading would benefit the mineral dealers—many of their steadiest customers have exchanged specimens for years.

The following rules are suggested with the understanding that exceptions could be arranged by mutual consent of the participants.

### Rules for Exchanging Mineral Specimens

1. State type of specimens wanted and not wanted.
2. Return privileges must be guaranteed.
3. Make descriptions as complete and accurate as possible in regards to species, location, condition, size of xls and matrix, and associated minerals.
4. After mailing descriptions, put aside individual specimens described and hold for 30 days. If no answer is re-

ceived in 30 days, the specimens described need not be held any longer.

5. Do not expect rare or unusual minerals for common minerals at a ratio of one for one.

6. Last but not least, wrap a label (giving name and locality) with each specimen sent out.

Rules 1, 2 and 3 are obvious musts. Rule 4 is probably as important as any because if a collector does not describe and hold individual specimens aside, pending conclusion of the exchange, he will probably end up shipping something quite different than originally described. A list of six minerals described as distinct individual specimens is far more useful than a list of 200 undescribed specimens. Rule 5 should help eliminate a carload of wasted correspondence by discouraging in advance the folly of offering common or inferior materials for the rare or unusual.

Many collectors are willing to trade on a basis of shipping on any duplicate material they acquire without bothering with exchanging descriptions or lists. This is an ideal and friendly way of trading and is particularly adaptable in exchanging micro specimens where the cost of shipping is low and duplicate material is usually abundant. In exchanging large sized or highly prized specimens this method can be impracticable for obvious reasons.

Here are a few more suggestion that should stimulate trading. Make it a requirement that all subscribers in the exchange column not only furnish references but agree to strictly honor the rules. This would certainly be welcomed by the regular subscribers because their integrity and ethics are already established and functioning along lines similar to the proposed rules. Standard rules would save them endless paperwork. As to the vast number of collectors who wish to trade specimens but have never used the exchange column, it would be to their advantage to do so because they would immediately indicate that they are wil-

ling to abide by the rules. I think everybody will agree that it would be preferable to trade with people who have signified their good faith in the form of a small ad than with unknown persons who remain a question mark that only time and a stream of interstate mail can clarify.

It would be a pleasure to see some plan of this nature vigorously supported by a majority of collectors, students,

teachers, colleges, museums, mining bureaus, mineral dealers, and mineral societies.

All would benefit!

LU WATTERS  
1613-151st Ave.,  
San Leandro, Calif.

PS: Basic rules and ethics could be added to the by-laws of the mineral clubs and societies.

## COLLECTOR'S COLUMN

Conducted by A. CAL LECTOR

This column, designed to be a help to beginners in mineralogy, began with the Sept.-Oct., 1948, issue. In the last issue we looked at epidote. This time we will study fluorite, a common mineral, which challenges the rainbow with the variety of colors it exhibits. It is often called fluorspar.

### Fluorite

The name fluorite comes from the Latin word *fluere*, meaning to flow, because it melts easily. Fluorite is found in veins either as the chief mineral or as gangue mineral with metallic ores. It is common in limestones and dolomite-limestones, and is occasionally found in pegmatites. Fluorite occurs massive, granular, occasionally fibrous, and as excellent crystals of the cubic system, frequently twinned in forms of interpenetrating cubes. Octahedral crystals may be found and, frequently, minute cubes may be grouped in parallel position to form a larger crystal appearing like an octahedron. Fluorite is number 4 on Moh's scale of hardness. It is transparent to sub-translucent and ranges in color from colorless, through nearly every color of the spectrum, to dark velvety brown and purple. Color often varies in different portions of the same specimen showing bands of different shades. Colorless fluorite of such purity and transparency that it is suitable for use in fine optical in-

struments is known but not common. Fluorite has perfect octahedral cleavage. Sir George Stokes, an English scientist, suggested the term fluorescence because the mineral fluorite exhibited this phenomenon so well. Fluorite is calcium fluoride.

Fine specimens of fluorite crystals come from Cumberland, Cornwall, and Durham in England. Another English locality, Derbyshire, produced a deep purple and fibrous "blue-john" which was much used for cutting into vases, paper weights, etc. The dolomite-limestone near St. Gotthard, Switzerland, produced beautiful pink octahedral crystals. Colorless, transparent crystals have been found near Madoc, Hastings County, Ontario, Canada.

The most important deposits in the United States occur in Hardin County, Illinois, at Rosiclare and Cave in Rock, and in nearby Crittenden County, Kentucky. At Clay Center, Ohio, a dolomite-limestone quarry produces fluorite crystals ranging in color from light honey yellow to dark velvety brown. These range in size from minute cubes to large cubes three to four inches on an edge.

If you do not have specimens of this beautiful mineral, hurry, contact your dealer, for no collection is complete without some.

## THE SAND COLLECTOR

Conducted by PETER ZODAC, Peekskill, N. Y.

Items on interesting sands wanted.

Please send them in.

### **Rock Crystal Sand from Tierra del Fuego**

We have received from W. T. O'Gara, Paleontólogo, Empresa Nacional del Petroleo Magallanes, Dept. de Exploraciones, Punta Arenas, Chile, 3 very interesting sands from the southern tip of South America. One of these, a rock crystal sand, is known as the Spring Hill Sands and is found in the oil bearing section of the country.

The Spring Hill Sand is a fine to coarse grained gray sand of which about 95% is rock crystal (many show crystal faces). It is a recrystallized sand (quartz) grains. This is a producing sand in the Cerro Manantiales oil field, Tierra del Fuego Island, Magallenes Province, Chile.

### **Glaucite Sand from Punta Arenas**

Dark gray, fine grained sand consisting chiefly of smoky quartz and medium coarse greenish glauconite, some elongated grains of pyrite, and a few thin plates of iron (may possibly be thin shavings off the drill pipe).

The sand is from the Upper Aqua Fresca formation in Punta Arenas, Magallanes Province, Chile. The sand was obtained from a depth of 484.6 to 486.1 meters in the Mina Rica #1 oil well. (A meter is 39.37 inches).

### **Beach Sand from Punta Arenas**

Coarse grained dark grayish sand consisting chiefly of magnetite (black lustrous), and quartz (colorless, smoky), with a little green epidote and zircon (pale brownish grains that fluoresce orange).

The locality is the mouth of the Rio de las Minas where it enters the Strait of Magellan at Punta Arenas, Chile. (Punta Arenas means Sandy Point).

In the Nov.-Dec. 1951 R & M, we printed on page 635, "Some notes on Punta Arenas, Chile", that were sent in by Mr. O'Gara. The following notes are taken from his letter of Sept. 22, 1951:

"I am delighted that you were pleased

with the sand samples. There are many possibilities for sand collecting here, and possibly a number of minerals may be found in sands in this locality. Of course all of the surface (or most of it) here is covered by terminal and lateral moraines and outwash sheet gravels and boulders from the glaciers that worked this whole area over. The Straits of Magellan are formed by the cutting through of two terminal moraines of somewhat different ages, and the largest reach of water south of them is a wide glaciated valley with lateral moraines on each side. This makes it hard for us to get down to bed rock and take dips and strikes and take samples for Foraminifera, because so few outcrops are present.

"The beach sand sent you is from the mouth of the Rio de las Minas where it enters the Straits. At high tides the waves wash over sand bars and winnow out the black sand which must be magnetite. The river is only 5 blocks east of my home here. (This Saturday is the first time the weather has permitted my going out on a little exploring trip). At first the sands of the beach had no appearance of being interesting, being coarse quartz sand and a variety of pebbles of igneous and metamorphic rocks. However I saw the black patches and thought that it might interest you. Now that the weather is improving I shall make excursions to other possibly productive collecting places. The mineral localities are too far away from us here for a short expedition. It will be an affair of 4 or 5 days to get any place where I can do any good collecting. But I have hopes of seeing some places before I leave for home.

"The thin plates of iron in the Mina Rica well are very likely chips from the drill, as we are always finding them in our well samples. Some of our samples are full of a sand made up only of platy crystals of feldspar, or I take it to

be feldspar. I will sift some out for you soon.

"I will take a trip up the Rio de las Minas (Minas River) to see if I can wash out any gold for you. I think the gold rush was actually over on Tierra del Fuego because there are abandoned dredges in some of the rivers over there.

"Mr. Soper isn't too far away (1000 kilometers) from us as Commodoro Rivadavia is well known, being the Argentine petroleum reserve area and is producing good oil. I will try writing to him. (See Nov.-Dec. 1951, R & M, p. 618, for a note on Argentina).

"I plan to write a small article for your sand collecting department, principally on aids useful for the housing of a sand collection and its exhibition. Since most of our samples ultimately are reduced to a washed residue mostly sand; oil companies have a problem in storage and utility of these sands, so I will detail our methods for what they may be worth to collectors.

"I am still collecting pebbles for you, but they run to metamorphic rocks and a limited number of igneous ones. I am afraid they aren't very attractive specimens. The Andean diorites are the only igneous rocks of any consequence as pebbles here because the glaciers originated in the southwest and deposited their debris in a northeast direction. The metamorphics are probably Jurassic and Cretaceous."

#### **Shell Sand from Bermuda**

Mrs. Sarah Sherlock, 34 Parkway West, Bloomfield, N. J., visited the Bermuda Islands last fall (see her article in this issue describing the trip). While there she collected some sand samples for us. One of these was a mottled pink-white-brown coarse sand made up mostly of small sea shells with some coral. Some of the shells are extremely beautiful — rounded, elongated, irregular shape and all highly polished by the sea. This is a beautiful sand. Furthermore it fluoresces and phosphoresces pale greenish under the Mineralight; some fluoresce yellow but do not phosphoresce. The locality is Pink Beach, Paget Parish, Bermuda

Island (the largest island of the Bermudas).

From Elbow Beach, also in Paget Parish, she sent us 2 samples of beach sand, a fine grained and a medium grained. Both are cream-colored and both are made up of remnants of sea shells and some corals, mostly white or cream colored but some pink is also present. These also fluoresce and phosphoresce pale greenish, some fluoresce yellow but do not phosphoresce.

#### **River Sand from California**

This is a dark brown bronzy sand, medium grain, consisting of bronzy mica (biotite), brown and milky quartz, a little magnetite, etc. The bronzy mica is the dominant mineral of the sand. Collected from the banks of the Trinity River in the Trinity Alps region, Trinity County, northern California, and a nice sample of it was sent R & M by William P. Stearns, 153 Vicksburg St., San Francisco 14, Calif.

#### **Chromite Sand from North Carolina**

Kent C. Brannock, 573 Jackson St., Kingsport, Tenn., sent us a most interesting sand — "A chromite sand from a small stream near the Carter corundum mine, in Madison County, N. C. This can be found at several places around the peridotite of that locality," he informs us by card dated June 7, 1951.

This is a coarse black sand consisting chiefly of chromite (black, sharp octahedrons) and magnetite (black grains), with some quartz (brownish, being stained by iron), and a few brownish zircons that fluoresce orange. This is the first chromite sand we ever saw in which the chromite occurs as sharp crystals.

In U. S. Geol. Survey Bull. 269, "Corundum, Its Occurrence and Distribution in the United States," by Joseph Hyde Pratt, Wash., D. C., 1906, the following item on the Carter mine appears on page 126:

"This mine is in the southeastern corner of the county, very close to the Buncombe County line. It is located on Holcombe Branch, a tributary of Little Ivy River, and near the northern end of a strip of peridotite which extends from

Morgan Hill, in Buncombe County, a distance of more than 2 miles, and which has an average width of about one-fourth mile."

In the same bulletin, on page 34, it is stated that the Carter mine is near Democrat, Buncombe Co., N. C.

#### **Beach Sand from Puerto Rico**

H. F. Obermanns, prop. of Hank's Rocks and Minerals, 2164-66 B St., Sparks, Nev., made a short visit to Puerto Rico a year ago and while there collected for us a sample of beach sand. The sample comes from Loquillo Beach (on the Atlantic Ocean) at Loquillo, on the northeastern coast of the island.

The beach sand is dark gray in color, fine grained, and consists entirely of coral (brownish with some white). The coral is chiefly in thin elongated grains.

#### **21,413,119 Grains of Sand from Ohio!**

W. C. Brown, 618 W. North St., Piqua, Ohio, had us on pins and needles for almost a month, from Nov. 14 to Dec. 3. Who wouldn't be all excited if he received a letter such as we did from him, on Nov. 14, part of which read:

"I am sending you 21,413,119 grains of sand. Now to let your curiosity have a real tour, do not read the enclosed note (folded many times) until you have opened the package. I hope you can survive the wait."

On Dec. 3rd we received his package which contained a small glass vial,  $\frac{1}{2}$  inch in diameter and  $2\frac{1}{2}$  inches high, crammed to the top with brownish sand. The sand was in 4 layers, very fine at the bottom, graduating to medium grain at the top. A label with some figures was attached to the vial. The sand and the figures didn't make sense until we opened the note, which read:

"The vial contains four kinds of sand, all taken from the bed rocks of Ohio, at a depth of more than one-half mile. They are from the drillings of various oil wells. Each layer of the four, is from carefully screened material, measured in amount and so counted by simple mathematics. Let him who doubts the numbers start counting!"

This certainly is a most interesting

sand. According to the figures on the label, the top layer of sand contains 43,919 grains; the second layer 385,376 grains the 3rd layer 1,835,008 grains, and the 4th (bottom) layer, 19,148,816 grains for a grand total of 21,413,119 grains! We will make no effort to check his figures but will take his word for it! Incidentally the sand consists of colorless quartz, brownish limestone and some black asphaltum (as seen through the glass).

Mr. Brown is connected with the Ohio Geological Survey, and the Survey is now cooperating with the mineral collectors of its State. See the item on this cooperation in the Nov.-Dec. 1951, R & M, p. 606.

#### **Beach Sand from Virginia**

Mrs. George C. Barclay, 119—27th St., Newport News, Va., sent us 3 samples of beach sand from her area. These sands are as follows:

York River Beach, Yorktown, Va. Medium grained, dark gray sand consisting entirely of quartz (smoky, colorless, and brownish).

James River Beach, Newport News, Va. Fine grained gray sand, almost all quartz (colorless, smoky, brownish) with a little black magnetite.

James River Beach, 6 miles northeast of Newport News, Va. Fine grained black sand consisting of magnetite (black), quartz (colorless), epidote (green), zircon (brownish and fluoresces orange).

#### **Dune Sand from Georgia**

From Dr. A. S. Furcron, Assistant State Geologist, 425 State Capitol, Atlanta 3, Ga., we received a nice sample of dune sand from Albany, Dougherty County, Georgia. This is a medium grained brownish sand consisting entirely of quartz (brownish, colorless, smoky).

A letter from Dr. Furcron, dated April 18, 1951, has the following paragraph:

"This sand dune area extends for fifty miles along the east side of the Flint River. In Pleistocene times the river became clogged with sand which probably was transported down stream but deposited because of a marine embayment.

Prevailing winds from the west have piled up this sand to form a long narrow desert area on the east side of the Flint River. The big dunes now have ceased moving and have become fixed by sparse growth of vegetation."

#### Volcanic Sand from Nicaragua

C. O. Gettings, 2001 Starr Ave., Toledo 5, Ohio, sent R & M a glass vial full of volcanic sand from Monotombo Volcano, Nicaragua. This is a black coarse sand which consists chiefly of black pitted lava with minor amounts of magnetite (black), quartz (smoky and colorless), and black obsidian.

Monotombo, an active volcano, is on the north shore of Lake Managua, the 2nd largest lake in Nicaragua (Lake Nicaragua is the largest).

#### DINOSAURS

Filmstrip (Black and White Script) 38 Frames, *Dinosauria*.

Produced by the National Film Board of Canada for the National Museum, 1950.

#### STILBITE — MELLEN, WISCONSIN

By K. SPIROFF

Associate Professor, Department of Geological Engineering  
Michigan College of Mining and Technology, Houghton, Michigan

Stilbite is a well known and a very common mineral, usually occurring in or being associated with lava flows. However in the Keweenawan flows on the southern shore of Lake Superior stilbite seems to be a rarity.

In U. S. Geological Survey Monograph 52, page 395, speaking of the minerals found on the Keweenawan Peninsula Van Hise and Leith say "The following are very common: various zeolites such as laumontite, thomsonite, stilbite and mesolite".

Stilbite may be common but the writer has not seen any in the field or laboratory. There are not any in the museum at the College or in the Calumet and Hecla office. The only place the writer has observed what might be called stilbite is in the Bear Lake Exploration pits. Here there are small reddish material in veinlets. These flows (?) as far as it can be ascertained are above the None such shales and therefore not a part of the main Keweenawan lava flows.

**SUMMARY:** A brief introduction to the study of these prehistoric creatures, showing the traces they have left in ancient rocks and describing the appearance and habits of different types.

**CONTENT OUTLINE:** Opening sketches indicate the area in North America where dinosaurs once lived, and show the stage in the development of animal life at which they appeared. Pictures taken in the Badlands of Alberta illustrate the search for dinosaur bones imbedded in the rock there. At the National Museum, Ottawa, to which the fossils are sent, we see a skull, bones, and the impression of a fossil skin, from which information on creatures long extinct is gained. Using these fossils and reconstructed pictures of the dinosaurs as they looked when alive, the filmstrip briefly describes the characteristics of the main varieties.

**SUGGESTED USES:** For natural history, physiography or geology classes in intermediate and senior grades.

**Note:** For particulars of preview and price, please apply to:

National Film Board of Canada,  
1270 Avenue of the Americas,  
New York 20, N. Y. (Miss Janet Scellen).

At the Copper Falls Park, Mellen, Wisconsin, the lava flows with the intercalated sandstones have been elevated (tipped) so now they are in vertical position and very much faulted.

The Bad River has cut a picturesque V gorge so the rocks are well exposed.

Just below the foot bridge small veins were observed in the lava. The vein filling mainly is white cleavable calcite and a brownish platy stilbite. No crystalline material was found.

The plates are of about  $\frac{1}{2}$  inch in diameter showing one perfect plus cleavage. The other megascopic characteristics are: hardness around 4 plus, specific gravity as determined by Joly Balance 2.3 plus or minus. The material is translucent. The microscopic characteristics are:

Alpha 1.490 plus or minus .001

Gamma 1.498 plus or minus .001

Beta 1.497 calculated

2V in glycerine, n, 1.47=38°

Moderate dispersion

## CLUB AND SOCIETY NOTES

**Attention Secretaries**—Please submit neat copies. Give dates and places of meetings. Check names for correct spelling.

### Peter Zodac Day at Franklin, N. J.

October 21st, 1951, has been proclaimed Peter Zodac Day by Leonard J. Duersmith, president of the Mineralogical Society of Pennsylvania. The day was celebrated with a Tri-state Field Trip to Franklin, N. J., Zinc Mine. Mr. Zodac was the guest of honor. Two hundred and fifty people gathered on the Buckwheat Dump to collect, chat and swap minerals. Organizations participating in the celebration were the New York (N.Y.) Mineral Club, Mineralogical Society of Nutley (N.J.), Queens (N.Y.) Mineral Society, Newark (N.J.) Mineralogical Society, and the Mineralogical Society of Pennsylvania, sponsor of the trip.

The activities were centered at the famous Buckwheat Mine whose deep pit was a source of much attraction and wonderment while its huge dump was full of surprises. Everyone was soon busy collecting. Some dug holes in the dump uncovering many choice items, others cracked open large "boulders", still others roamed the terrain hoping to spot some choice mineral that may have escaped the eyes of previous collectors. Pete Zodac found a good sized mass of serpentine just loaded with molybdenite (a mineral in which he specializes and as it was the first time he ever found it at Franklin he was soon hard at work breaking out specimens). When a group of

collectors approached, attracted by his hard pounding, and not knowing who he was but curious to see what he was breaking out, they were offered some specimens.

"Huh, just graphite", one said in disgust, and they all walked away.

"Maybe they are graphite to you," Mr. Zodac was heard to say, "but they are molybdenite to me, and it's nice, too."

So large was the group on the dump and so busy at work were the collectors that passing motorists stopped in amazement, wondering what was going on. Some of them got out of their cars and walked towards the collectors, so curious were they. No doubt this group was the largest ever to collect at Franklin, therefore it is no wonder that it attracted a lot of attention.

Some of the minerals found on the Buckwheat dump were amazonstone, apatite, calcite, dolomite, epidote, fowlerite, franklinite, garnet, molybdenite, pyrite, serpentine, sphalerite, willemite and zincite.

Later some of the group wandered over to the Parker shaft (J. K. Fisher, of Havertown, Pa., found a piece of fluorescent fluorite) while many more went to the nearby limestone quarry where fluorite, graphite, norbergite (very attractive and fluorescent), pyrite and pyrrhotite were obtained.

A commendable feature was the registration table where a collector not only had his name



Many of the cars were parked at the Buckwheat Mine in Franklin, N. J. The dumps are to the left; the deep pit is on right.



**Leonard J. Duersmith (right), president of the Mineralogical Society of Pennsylvania, sponsor of the big field trip to Franklin, N. J., and Peter Zodac. Note the identification tags; that of Mr. Duersmith's is almost hidden by his left arm.**

recorded but he was given a round identification tag, 3" in diam., which bore on both sides the following inscription



After writing his name on both sides, the collector attached it to his sweater or jacket by means of a string which came with the tag.

Before the activities ceased, a swapping spree took place—and what an assortment of good material was displayed for barter! Curt Seeger, president of the Queens Mineral Society, had such a fine assortment that many thought it was part of his collection. "Just some duplicates from my recent Canadian trip," he kept saying over and over again. "If you

think this is good, you should see what went into my collection!"

Wallace Knapp, a young collector of Rhinebeck, N. Y., had quite a number of nice rock crystals (group and singles) from the Rhinebeck "gold" mine. He not only got rid of everything but could have used more; his crystals were a sensation as they were the first ever seen from his locality.

Someone or a number of someones donated some basketfuls of free minerals, and these went like hotcakes.

The swapping hour was a great success as everyone participating seemed well pleased.

After the swapping hour was over, a group picture was taken of those willing to pose. You just can't get all collectors in a picture; many will not leave their collecting. This concludes the day's activities for the group as a whole and one by one the collectors began leaving for home.

A great day was had by all!

#### **Tucson Gem and Mineral Society**

Officers elected for year 1952 of the Tucson Gem and Mineral Society are as follows: President, Mrs. A. H. Murchison; Vice President, C. W. Fawcett; Secretary, Mrs. Len C. Marvin; Treasurer, Miss Wally Thies.

Photo by William E. Hope

Some of the group at the Buckwheat Mine, Franklin, N. J.



**Newark Mineralogical Society**  
**October, 1951, Field Trip**

A Franklin, N. J., trip is always a high light, but this year a new twist was added and it was such a successful innovation we hope it can be repeated annually. One rather bleak day in October, the 21st to be exact, we met on the outskirts of Franklin at the Towers as usual, prepared for a happy day of digging in this dump of all dumps.

We knew we might be joined by a few members of other nearby mineral clubs, but it is doubtful if anyone expected an influx of people from four states. Our own club members were the only people present when we arrived at the customary parking place above the Buckwheat Dump in mid-morning, but by noon both sides of the highway were solid with parked cars and they kept coming. Judging by the astonished looks on the faces of passing police officers as more and more people arrived to swarm over the dump, nothing like this had ever happened at Franklin before! It was estimated that about 250 collectors were on hand—either industriously digging for the ever coveted Franklin unusuals or joyfully greeting old friends—or both. Exchange, give away, and exhibit tables were set up by many groups and an atmosphere of good fellowship permeated the day.

Peter Zodac was guest of honor and our own society, as well as several others, have recorded this day as Peter Zodac Day in grateful thanks for the faithful service he has given collectors through ROCKS AND MINERALS and his generously given friendship. Several club members were able at this joint outing to meet for the first time people who had previously been only names at the end of a letter or under the title of an R & M article, and we noticed that along with Mr. Zodac, Leonard Duersmith, Leo Yedlin, Al White, Louis Reamer, Ted Schoen and Wesley Hayes were very much in demand.

Despite the time spent in picnicking, picture taking, exchanging and just talking, much hard work was done and several fine specimens brought to light. Al White, Louis Reamer and Wesley Hayes found exceptionally good willemite and hydrozincite specimens, and Wesley Hayes was fortunate in finding an excellent polyadelphite.

A few collectors who had brought along their mineral lights braved the chill weather, waited until dusk fell, and made a quick check of the dump after dark making it possible to find more good specimens which otherwise might have escaped notice. When at last we headed for home two things were agreed upon by all—this was the best Franklin trip ever, and occasional joint outings should be encouraged.

**Annual Meeting**

If elections are any indication of things to come it is apparent that the Newark Mineralogical Society has another busy and productive year ahead. At the 36th annual meeting on November 4th, Albert S. White was re-elected as president and Louis Reamer began his tenth year as the society's secretary. Other officers elected are: Gene Vitali, vice president; Isabel Bemis, treasurer; and Edwin Judd, trustee.

**November Meeting**

The 285th regular meeting immediately followed the business of the annual meeting and Mr. White gave a brief but interesting account of the first convention of the newly formed Eastern Federation which had been held in Washington, D. C., October 25-27th, 1951. We were flattered to learn that not only Mr. White, himself, had been elected vice president of the Federation and that another of our popular members, Bill Aitken, had been elected executive vice president, but also that the Federation had voted to hold its 1952 convention in Newark. With two of our members serving as Federation officers it was plain to be seen that the society would be on its toes conventionwise from that point on.

Committee chairmen for the 1951-52 season were announced by Mr. White as follows: Membership, Philip Lum; Program, Wesley Hayes; Outings, E. J. Talamini; Auditor, Morris Weeks; Publicity, Lucy DallaValle; Nominating, Edwin Bemis; and Librarian, Alma Dresser.

The remainder of the afternoon was devoted to a most interesting lecture given by Mr. Paul Seel of Bala-Cynwyd, Penn. Mr. Seel gave a detailed account of his trip through the southwest and captivated his audience with breathtakingly beautiful color slides of the Navajo Reservation, Boothill Cemetery, Salt River Canyon, Grand Canyon, the Apache Trail, Painted Desert, Monument Canyon and Thunderbird Ranch. So successful was he in describing this magnificent country that everyone in his audience felt they had actually been there and were genuinely regretful when his talk came to a conclusion.

**December Meeting**

On Sunday, December 2nd, at the 286th regular meeting, activities for the coming year were briefly outlined by various committee chairmen and into all of these crept references to big plans for the success of the Eastern Federation's second annual convention when it comes to Newark. As we are one of the host societies for the convention it was gratifying to see so much enthusiasm exhibited at this early date, and when Mr. White asked for volunteers to serve on convention committees it was obvious that there would be no shortage of willing and capable workers.

After the business meeting Mr. William C. Casperson, one of our members, addressed the society on the subject of Pseudomorphic Formations. His talk was informally but con-

structively given and illustrated by choice mineral specimens from the cabinets of the Pater-  
son Museum of which he is Curator. It was  
a privilege to see these rare specimens and  
to learn more about a subject which at one  
time or another has perplexed many of us.  
As members had been requested to bring pseudomorphs from their personal collections for  
display and explanation, the combined array  
of illustrative material and resulting discussion  
made the afternoon a most satisfying and in-  
structive one.

Lucy S. DallaValle  
Publicity Chairman  
2 Jefferson Ave.  
Maplewood, N. J.

**Chattanooga Rock and Mineral Club**  
**October 9th Meeting**

The regular monthly meeting was held in Room 108, Brock Hall, University of Chattanooga, Chattanooga, Tenn. Col. Carl M. Gevers had the program, his subject being Quartz Crystals. He discussed the sources, varieties, forms and uses, passed around numerous specimens, and in fact presented a most complete picture of the crystal mineral.

At the conclusion of his discussion, the annual election of officers was held and the following slate was unanimously adopted:

Col. Carl Gevers, principal of North Chattanooga Junior High School, president; Baynard Smith Jr., vice-president; Warren Smith, secretary; T. Walter Brown, treasurer; Prof. B. K. MacGaw, programs; Hans Thurnnaeur and Baynard Smith Jr., field trips; Marcia McMillin, local publicity; George C. Olmsted, corresponding secretary.

**November 27th Meeting**

The meeting was postponed from Nov. 13th due to so many members planning to attend the opera "Barber of Seville" on that date. Since our member, Miss Marcia McMillen, designed the scenery to the admiration of the audience and to the acclaim of the press, she was given a warm hand of commendation at our meeting.

The speaker of the evening was Thos. E. Colston, Jr., spectrographer, Research Institute, University of Chattanooga, his subject being "Minerals in Spectrography". The discussion was so far over the writer's head that he is unable to give a coherent account. Anyway, there seems to be two varieties: the prism type and the dispersion. A satisfactory outfit costs about \$50,000 and it was suggested that the club defer, at least for the time being, the purchase of one. It was a learned discussion, or rather an address.

**Meeting of December 11, 1951**

The meeting was held at 7:30 P. M., in Room 108, Brock Hall, University of Chattanooga.

The speaker of the evening was Prof. B. K. MacGaw, Geology Dept., of the University of

Chattanooga. His subject was "Rhabdomancy" which to our innocent minds had no meaning whatever. However, he kindly explained that it is the art of divination, that is, the ascertainment by unknown powers of what lies below the earth's surface. Reducing this to its lowest terms: folks who tell you where to dig your well.

The meat of Prof. MacGaw's discussion was a Maine farmer, one Henry Gross. Mr. Gross frequently located underground streams for his neighbors, and in this way performed the service for Kenneth Roberts, the well-known historical novelist. After considerable observation, Mr. Roberts formed a company with Mr. Gross, "Water Unlimited, Inc.", Kennebunkport, Maine.

Some times later Mr. Roberts went to Bermuda where the water problem is acute. Most wells are dry or the water not potable. Rain water cisterns prevail.

Mr. Roberts sent a map of Bermuda back to Mr. Gross in Maine, 600 miles away. Mr. Gross had never seen Bermuda. He looked over the map, talked to it, asked it questions, marked it in four places and sent it back to Mr. Roberts with the explanations (1) that three of the wells would yield good water, the fourth would not be potable, (2) he gave the depth at which water would be found, and (3) the yield in gallons of each.

Mr. Roberts reported that the wells all struck water (1) of the kind indicated, (2) at approximately the depth indicated, and (3) close to the expected gallogane.

Mr. Gross uses neither rod nor forked stick. He does not know how he obtains his answers, "water dousing" as it is often called. Prof. MacGaw has no explanation. And neither has yours truly.

Geo. C. Olmsted,  
Corres. Secty.  
1129 James Blvd.  
Signal Mountain, Tenn.

**Los Angeles Lapidary Society**

Miss Ruth Simpson, Assistant Curator of the Southwest Museum, gave an interesting and educational lecture on "Stones used by the Indians for Ornamental Purposes", at the November meeting of the Los Angeles Lapidary Society.

She is a graduate of U. S. C., where she studied Anthropology and Geology and has made the study of Indian Jewelry her hobby.

The lecture covered the prehistoric and historic Indians, and the talk was illustrated with a fine display of Arrowheads, Turquoise Jewelry, figurines, fetishes, pipes, charm stones and beads.

The oldest site where many of these articles were excavated, is our own Mojave Desert and estimated at 10,000 Years old.

Claire Schroeder, Pub. Chairman  
P. O. Box 2184, Terminal Annex  
Los Angeles 54, Calif.

### GEORGIA MINERAL SOCIETY

#### Spruce Pine Field Trip

The Gem Section was host to the entire Georgia Mineral Society on a trip to North Carolina, September 29-30. Spruce Pine, in the Little Switzerland area of Western North Carolina, was the destination chosen by the Gem Section.

The first stop was at the Green Gift Shop at the first traffic light as you enter Spruce Pine from Gillespie Gap. The owner of the shop, Linton Green, has an outstanding collection of North Carolina minerals and gems and is familiar with the localities from which they came. He also has arranged a fine exhibit of fluorescent minerals many of which came from other sections of the country.

The next stop was the old emerald mine above Little Switzerland at which, a number of years ago, a pegmatite was mined for emerald. All of the group found emerald in the matrix some of which would make attractive cabochons. Some of the emerald found was in quartz but the most colorful occurred near the contact between quartz and black biotite wall rock.

An aquamarine locality was visited, next, to the right of the Spruce Pine road from Gillespie Gap. While darkness had almost arrived before the old mine dump was found, aquamarine fragments were picked up by everyone present. Mrs. Roy McGinty, of Elberton, Ga., found the finest crystal of gem quality. Although small, it was aquamarine of a beautiful bluish hue.

On Sunday morning the Georgia group accepted invitations to call on individual collectors of North Carolina minerals. The first visit was to the home of Clarence Wilson, Rt. 1, Bakersville, N. C. Mr. Wilson had the upstairs section of his home filled with excellent mineral specimens. He lives near Roan Mountain where he has found unusually fine crystals of epidote—the finest the Georgia group had ever seen. Mr. Wilson also showed unusually good unakite specimens (massive pink feldspar and epidote) which engaged the interest of the Gem Section members particularly. For those interested in fluorescent minerals, Mr. Wilson exhibited pink calcite from Grandfather Mountain, near Blowing Rock, N. C. This had been found in one vein only on this mountain.

The next call was to the shop of Roby Buchanan, at Hawk, N. C. Here the Buchanans fashion exquisite jewelry from the Western North Carolina gems. They design unusually attractive settings and their work shows much individuality. The Georgia group was shown a large star garnet set appropriately for a man's ring.

The Georgia group was invited to Wilson, N. C., also, to see the collection of B. F. Eason, who was helpful in directing the visiting collectors. Lack of time prevented this.

#### Annual Dinner Meeting

Members and guests of the Georgia Mineral Society met in the Georgia Tech banquet hall at 6:30 P.M., October 8, for their 17th annual meeting. Dr. H. W. Straley, president, summarized the year's activities of the Society. M. T. Thompson, district engineer of the U. S. Geological Survey, discussed "Rocks, Rivers, Minerals and Waters." Engineer Thompson has been conducting surface water investigations in Georgia, in cooperation with the Georgia Division of Mines, Mining, and Geology.

Romeo Martin, assistant professor of geology at Emory University, was installed as incoming president. Other officers installed were Sam Knox, vice-president; J. R. Chapman, secretary; S. P. Cronheim, treasurer; Dr. Frank Daniel, historian; and Dr. A. S. Furcron, editor of the NEWS LETTER.

Erna L. Mason, Corresponding Secretary  
State Health Department,  
Atlanta, Ga.

#### Mineralogical Society of the District of Columbia

The August meeting of the Mineralogical Society of the District of Columbia was held on Mr. James Benn's lawn.

Dr. William F. Foshag talked on the mineral exhibits of the museums of Europe.

The September meeting was held on the lawn at Col. John Livingston's home. The main feature of the evening was an auction of donated specimens with Col. Dick Mitchell acting as auctioneer. Proceeds went toward financing the first convention of the Eastern Federation. The September trip to Amelia Court House, Virginia, took place on the 29th and 30th and was reported as very successful. Billy Guercke, a junior member, found fine specimens of green amazonite.

At the October meeting the society welcomed Col. John Livingston back from Korea. He talked on minerals coming to his attention in the Far East. A prize of \$5.00 was awarded to Joel Shappirio for the best mineral specimen collected during the year. Joel won with a fine specimen of coxcomb marcasite.

At the November meeting Mr. Ned Blandford talked on his recent trip to New England. He exhibited specimens of babingtonite, amethyst, heulandite, staurolite, garnet, grafted, and smoky quartz.

Major and Mrs. John Atkins announced that the elementary schools of Arlington, Virginia, are including mineralogy in their science studies this year and need specimens for study. Some members immediately responded with donation of specimens and others promised specimens for later delivery.

Major John D. Atkins, Jr.  
5318-8th Road S.,  
Arlington, Va.

**Greylock Mineral Club, 1951**

Jan. 18—An organizational meeting was held at the home of Bertrand Giegerich, Pittsfield, Massachusetts, with 13 people present. About half this number is interested primarily in cutting and polishing gems. The group is an outgrowth of a course in rocks and minerals identification given at the Berkshire Museum during the fall of 1950 by Mr. Leo D. Otis, Director of the Science Museum at Springfield, Massachusetts.

Feb. 9—At this meeting the Berkshire mineralogists named their group the Greylock Mineral Club and organized it on a very informal basis, naming Bertrand Giegerich as Chairman and Miss Francis Palmer as Secretary. S. Waldo Bailey showed his large and interesting collection of Indian artifacts.

March 9—Alfred Hogue showed his polishing workshop and polished specimens.

April 12—Harry F. Miller demonstrated gem cutting and showed his collection of polished specimens and cabochon gems, many of which are set in intricate silver rings and other jewelry by Mrs. Miller.

May 3—Discussions of minerals collected on previous field trips.

June 7—Herbert Arnold discussed and demonstrated the use of the spectroscope in mineral analysis.

July 12—Discussion and examination of minerals collected by Daniel Clark of Tyringham in that town some fifty years ago.

August 9—Discussions of minerals collected on previous field trips.

Sept. 20—A blowpipe analysis demonstration was given by Herbert Arnold.

Oct. 18—Discussions of minerals collected on field trips.

Nov. 8—A talk on quartzes, with illustrative specimens, was given by Miss Frances Palmer.

Dec. 6—A talk on feldspars was given by Bertrand Giegerich, with specimens to illustrate the various types.

Dec. 10—Five members of the club spent the evening at the Berkshire Museum arranging a display case of minerals collected by various club members.

**Field Trips**

April 22—Westfield Trap Rock Quarry. The group found calcite, datolite, babingtonite, prehnite, stilpnomelane, and amethyst.

June 17—Barris Farm, Goshen, Mass. Watermelon tourmaline, spodumene, pink mica, albite, and Goshenite (beryl) were found.

July 22—Plainfield Rhodonite Mine (Betts Farm). The group found rhodonite, rhodochrosite, garnets, magnetite, pyrrhotite, and pyrite crystals.

Aug. 26—Pittsfield State Forest. Search for gold yielded none. Pyrite crystals, calcite, and quartz were found.

Sept. 9—Roxbury, Conn., Siderite Mine. Siderite, sphalerite, quartz crystals and galena were found. Garnets were obtained at the Roxbury Garnet Mine.

Sept. 23—Exploration for allanite in South Windsor. None found. Wahconah Falls yielded talc and soapstone.

Nov. 11—Loudville Lead Mines. Quartz crystals, galena, sphalerite, wulfenite, malachite, and barite were found.

Nov. 18—Portland, Conn. The Strickland quarry yielded pink spodumene, lepidolite, beryl, tourmaline, cleavelandite, and apatite, plus the common pegmatite minerals. The Hale quarry was visited also and fluorite in coarse granite was obtained as well as very beautiful graphic granite.

Miss Gladys H. Schumacher,  
28 Preston Ave.,  
Pittsfield, Mass.

**NATIONAL GEOLOGY TEACHERS ORGANIZATION ESTABLISHED**

A meeting of geology teachers from 10 states was held on November 10, 1951, in the Book-Cadillac Hotel, Detroit, Michigan for the purpose of organizing an Association of Geology Teachers in the United States. Previous to this meeting geology was one of the few sciences whose teachers have not been organized on a national basis.

The organization is not new, however, for geology teachers in several mid-western states have met annually for ten years to discuss mutual problems and exchange ideas in the teaching of the earth sciences and last year an Eastern Section was organized for the same purpose. The Detroit meeting established the organization on a national basis joining the two existing sections and fostering establishment of new sections throughout the country.

The purposes of the Association, according to the constitution adopted at the Detroit meeting, is "to foster improvement in the teaching of the earth sciences at all levels of formal and informal instruction, to emphasize the cultural significance of the earth sciences, and to disseminate knowledge in this field to the general public." The Association publishes the *JOURNAL OF GEOLOGIC EDUCATION* and *TRANSACTIONS*.

Officers of the Association for 1951-1952 were elected as follows:

President: Kurt E. Lowe, City College of New York, N. Y.

Vice-President: Percival Robertson, The Principia College, Elsah, Ill.

Secretary: Ralph Digman, Harper College, S. U. N. Y., Endicott, New York.

Treasurer: Gerald M. Friedman, University of Cincinnati, Cincinnati, Ohio.

Editor: William F. Read, Lawrence College, Appleton, Wisconsin.

Geologists interested in obtaining further information about the Association, which now has a membership of nearly 150, are invited to write to the President or the Secretary.

**Rochester (Minn.) Earth Science Society**

The Rochester (Minn.) Earth Science Society was organized in May, 1950 with 31 charter members. The group is made up of men, women, and children interested in geology, paleontology, mineralogy, and lapidary work. During the summer of 1950 three interesting field trips were arranged to study the local geological strata and to look for fossils and for Lake Superior agates and jaspers. Rochester lies in an area of sedimentary formation but stones brought down from northern Minnesota by glacial action are found in dry runs, river beds, and gravel pits.

During the winter of 1950 and 1951 programs were presented by members, as well as by several outside speakers. The outside speakers included Professor Duncan Stewart, Jr., Carleton College, who talked on Crystallography; Dr. George M. Schwartz, Director of the Minnesota Geological Survey, who spoke on the Geology of the North Shore of Lake Superior; and Mr. Eiler Henrickson, Instructor in Geology at Carleton College, who told us of his experiences in searching for uranium in Northern Michigan.

In March, 1951 Dr. Duncan Stewart, Jr., gave a series of three 2 hour lectures on the identification of Common Rocks and Rock Forming Minerals. A set of 34 rocks and the same number of minerals were distributed for study and at the third meeting members brought rocks for identification. This course was very popular and membership in the Society increased from 31 to 59.

Field trips during the summer of 1951 continued the search for agates and fossils and the study of geological formations in southern Minnesota. On October 20 and 21 a group of 31 society members had a successful two day trip to the unglaciated area of southwestern Wisconsin, about 200 miles southeast of Rochester. The scenery through the bluffs along the Mississippi and its tributary rivers was worth the trip. The autumn foliage was magnificent. The first stop was at the Calumet and Hecla lead and zinc mine at Shullsburg, Wisconsin, where an engineer, Mr. George F. McKereghan, gave an interesting talk about the mine before conducting the group through the processing plant. Marcasite, sphalerite, and galena crystals were collected on the mine dump. One interesting specimen of a group of fossilized cone coral was, also, found there. The dolomite, oil shale, and other rocks characteristic of the region were studied. Smithsonite and calcite crystals were collected in a quarry at Mineral Point, Wisconsin. Professor W. A. Broughton of the Wisconsin Institute of Technology at Platteville, Wisconsin, talked to us about the geology and mineralization of the area and showed us the school's museum.

The Rochester Earth Science Society is sponsored by the Rochester Community Evening College. Dr. Emil Heinz, Director of the Col-

lege, has given us excellent publicity and a meeting place in the Central School. Visitors to Rochester are cordially invited to attend our meetings on the second monday of every month or to get in touch with the officers.

The officers of the society are Mr. Dana Rogers, President; Dr. Henry Woltman, Vice-President; Mrs. Harold Whiting, Secretary-Treasurer; and Mr. Ralph Parkhill, Tour Director.

Mrs. Dana Rogers  
Corr. Sec'y  
820-10½ St. S.W.  
Rochester, Minn.

**Whittier Gem & Mineral Society**

The Whittier Gem and Mineral Society held its first meeting in its new meeting place on October 16, 1951. They now meet at the Girl Scout House and its rustic atmosphere and its inviting fireplace had a most cozy effect on all present. This was party night as two members of the group were honored on their golden wedding anniversary. They are Mr. and Mrs. Fred Wallis, who were married 50 years ago in Fresno. The Wallis' have been real rockhounds for many years and have a fine collection of minerals. The club presented them with gifts and a large wedding cake was given them. Goodby was said to Mr. and Mrs. Otto Dinius who leave this month for Altaville, Calif., where they will make their home. Life membership in the club was presented to them.

**2nd Annual Show**

The Whittier Gem and Mineral Society held their second annual Show at the Whittier Riding Clubhouse on Oct. 20 and 21, 1951. This proved to be a reunion for the ardent rockhounds of the vicinity. After viewing the show many informal groups from the various clubs gathered to discuss the many things dear to the hearts of the rockhounds. Visitors from as far south as San Diego and as far north as Ventura were present. The club was honored by having in attendance two officers from the State Federation, Mr. C. A. Dietrich and Mrs. Dorothy Craig. Over 1,200 visited the show.

Much interest was shown in the cases containing specimens obtained by the members on their various field trips held during the year. These had been cut and polished by the members themselves. Many fine minerals and gem stones were displayed. Several prominent dealers were at the show and had interesting material on display. Mr. Kenneth Tharp was the Display Chairman for the show.

Free booklets, giving a history of the club and maps and information of the years field trips taken, were given to each guest present at the show.

Kenneth W. Tharp  
438 N. Gregory Ave.  
Whittier, Calif.

### Pacific Mineral Society

Mr. Richard M. Stewart, of the California Division of Mines, brought us the fabulous story of scenic Inyo County, Calif., in November. This huge County, containing the extremes in altitude in the U. S., is second in the variety of minerals in the country; and the figure of \$138,000,000 represents what has been taken. Gold accounts for \$12 million; non-metallics borax, soda, talc, fuller's earth, etc. represent about \$24 million.

Lead, silver and zinc deposits are important, and the tungsten of the Bishop area produces commercially valuable scheelite.

Antimony, iron and manganese are present in moderate amounts and copper as a by product only. Some asbestos, feldspar, fluorite, mica, slate and sulfur have been mined. Talc of fine quality, steatite, as well as the ordinary kinds used for tile, have grossed about \$4½ millions.

The geology of Inyo County from the batholith of the Sierra Nevadas to the rocks of Death Valley containing all of the great time divisions, including 30,000 feet of stratified formation complexly folded and faulted to the Pre-Cambrian and Paleozoic meta-sediments of the Argos, Coso and Panamint ranges, comprise a real challenge.

Further, this County contains 44 square miles of inland waters.

Inyo County to many of us means, fishing, skiing, hot springs, and Mr. Stewart's study adds greatly to the enjoyment of our playground.

B. Royer  
1234 W. 41st St.  
Los Angeles 37, Calif.

### Pomona Valley Mineral Club

Highlight of the Pomona Valley Mineral Club year was the annual banquet held at the Claremont Inn in November. Since the members were so fortunate as to obtain George Burnham of Monrovia for speaker, the theme of the banquet, "AFRICA" carried out the speaker's topic "Collecting Minerals from Cairo to Dakar". Extraordinary and unique table decorations illustrating the theme were done by Mr. Victor C. Burnette and Mrs. Sammie Burnette who worked five weeks preparing the scenes. A typical veldt waterhole was the centerpiece showing African animal figures drinking while other animals lurked behind bushes waiting to prey on the smaller beasts.

A second scene depicted a jungle compound surrounded by a stockade. Cannibal figures were doing a war dance while monkeys watched as they clambered in the surrounding trees.

A third unit in the decoration was highlighted by native African dancing girl figurines in various stages of dress and undress performing before the tribal chief on his throne.

Each person's place card showed a map of Africa with a dotted line identifying Mr. Burnham's route and bore a specimen of mineral that he had brought back with him.

Mr. Burnham, who recently returned from a year's trip to Iceland, Europe, and Africa, related fascinating experiences he had undergone during the seven months he spent collecting minerals on the "dark continent". At the close of his talk he showed colored slides that he had taken on his lengthy "field trip".

At the close of the evening, members expressed their approval and appreciation to Miss Geneva B. Dow who was banquet chairman.

The Pomona Valley Mineral Club is increasing its membership very rapidly and members enjoy engaging in the many worthwhile club activities. In September the club sponsored the million dollar Gem and Mineral display and exhibit at the Los Angeles County Fair. The club members set up a mineral exhibit in the Pomona Public Library for the month of August, and many favorable comments were received by the library staff as to its interest and educational value.

The Pomona First Federal Savings and Loan Association permitted the club to use their large windows for an outstanding display of massive mineral specimens during the month of November. This display attracted much attention and created interest on the part of many people who made inquiries about the hobby and expressed a desire to join the club activities.

The first field trip of the season was to Orange County where beautiful massive pink cavernous salt crystal clusters were obtained.

A trip to the Calico mountains resulted in members adding unusual gypsum specimens, travertine onyx, petrified palm root and selenite to their collections. Alice Cohoon

Asst. Pub. Chm.  
246 West Aliso St.  
Pomona, Calif.

### Austin Gem and Mineral Society

At the December meeting of the Austin Gem and Mineral Society, (Austin, Texas), the following officers were elected to serve during 1952:

President—E. A. King, Vice President—Martin Kermacy, Secretary—Mrs. Mary Spears, Treasurer—L. J. Struhall. Directors—Emil H. Spillmann, Chester Brooks, Bud Harris, Henry Lindhe, Herman Porsch, Jr.

The outgoing president, Emil H. Spillmann, was presented with a gift from the Club in appreciation of his year's work, with McBride Wilson of San Marcos making the presentation.

Following the meeting the annual Christmas Party was held with Mrs. Chester Brooks in charge. She was assisted by Mesdames L. J. Struhall and Lewis Spears. Rock gifts were exchanged.

### Minnesota Mineral Club

The Minnesota Mineral Club has inaugurated a 'new deal', by which we made up our winter program far enough in advance to pass the information to non-members.

These programs are held in the East Room of the Curtis Hotel, Minneapolis, Minnesota, at 8:00 P. M. as follows:

December 8, 1951—Jewelry Making by B. G. Dahlberg.

January 12, 1952—Origin of Gems by Hazel Perry.

February 9, 1952—Romance of Diamonds by Kenneth Johnson.

March 8, 1952—Annual Banquet, Election of Officers and Geology of Minnesota by Arthur Anderson.

April 12, 1952—Gem Lore of the Orient by Mrs. Spaulding.

Many rockhounds in our vicinity who read Rocks and Minerals do not know we put on good programs. Prizes are usually given for various reasons. Visitors and embryo rockhounds are always welcome.

This is also to announce that the Minnesota Mineral Club will be host to the Mid-West Federation Convention on July 1, 2, 3, 1952. The Minnesota Geology Society will assist in putting this show on.

We are planning on having the best exhibition and convention ever put on by any Federation. Our members have attended many conventions, and we are selecting the best features (adding a few ourselves) and leaving out the undesirable ones. More on this later.

Joseph S. Heininger  
1315 Thomas Ave.  
St. Paul, Minn.

### Mid-West Federation of Mineralogical Societies

The Mid-West Federation of Mineralogical Societies held its annual convention on July 2, 3 and 4th at Houghton, Michigan, in the heart of the copper country.

The convention was probably one of the most successful yet held. There were 178 registrations not with standing the fact that the nearest society was located some 360 miles distant. All meetings were held on the campus of the Michigan School of Mines and Technology. Members of the faculty contributed to the program and conducted field trips to many of the mining dumps and points of geological interest. The convention gave the members the opportunity to view the exhibits at the Seaman Mineralogical Museum at the University where one of the finest collections of minerals in the country are displayed. All those that attended went home with good knowledge of copper and allied minerals and many choice specimens of native copper.

The new officers elected at the convention for the coming year are: H. T. Perry, President,

2501 Girard Avenue South, Minneapolis 5, Minnesota; Ken Russell, Vice President, 2510 East 76th Street, Chicago 49, Illinois; Mrs. Oriel Grand-Girard, Secretary, 817 Mulford Street, Evanston, Illinois; Marjorie A. Scanlon, Treasurer, 8403 S. Langley Avenue, Chicago 19, Illinois; Ben Hur Wilson, Historian, 406 Grover Street, Joliet, Illinois. Tentative plans were made to hold the 1952 gathering at either Minneapolis or St. Paul.

### Geode Rocks & Mineral Society

The Geode Rocks and Minerals Society of Southeastern Iowa enjoyed their second meeting under date of October 26, 1951, meeting at the city hall, New London, Iowa.

The members designated this meeting as the annual halloween meeting of the year.

The Society was fortunate to be honored by Dr. A. K. Miller, Professor of Geology at The University of Iowa, Iowa City, Iowa, the doctor being accompanied by his charming daughter, Miss Betty Miller, who assisted him with his lecture.

The one hour talk by Dr. Miller on "The Impression of a Geologist while traveling the Alaskan Highway" was illustrated by pictures taken by him while enroute to Alaska and while in the interior.

Dr. Miller's ability to emphasize on each picture and his ability to discern the past, present and his hopes for the future of this vast Northland possession of our own United States of America, revealed to his audience, why Dr. Miller is so very popular with the geology students of the University of the State of Iowa.

Dr. Miller's revelation of the courtesy and helpful attitude of the citizens and residents of Alaska to all travelers, should do much to speed more sight seeing rock-hounds along the Alaska Highway.

It is hoped that many students of geology and those interested in rocks and minerals who reside in southeastern Iowa will all join us to further this fine society.

E. N. Smith, President  
New London, Iowa

### Western Nebraska Mineral Society

The regular meeting of the Western Nebraska Mineral Society was held Monday, December 3rd, 1951, in the Chappell Memorial Library. We had a good turnout with 28 members present. There were visitors present, namely, Mr. and Mrs. Fred Nellen, Mr. Joe Sands, and Ole Olsen, all of Chappell.

In the business meeting, a plan was initiated to have a shelf of books of lapidary and geological references in the Chappell Memorial Library, the books to be furnished by and loaned to, the members of our Society.

Gordon Brooks was appointed as a committee of one to report on special equipment to be purchased by the Society.

Emmett Soule had charge of the program for the evening. Emmett had his big hydraulic there, and sawed specimens for all comers. Paul Bergstrom and Cecil Shunk had a fine outlay of sanding and polishing equipment present, for the benefit of all, contributing largely to the enjoyment of those present.

At the close of the program, Mrs. Tom Sutton served a tasty luncheon of cookies and delicious hot coffee. Her refreshment table was decorated in a woodland motif, with pine cones and needles, set off by tall crimson candles.

The next meeting will be Tuesday, January 7th, 1952. Wilbur Criswell will present a program on Agate.

G. W. Brooks, Reporter  
Chappell, Nebr.

#### Gem Cutters Guild of Baltimore

Although it is still less than two years old, the Gem Cutters Guild of Baltimore walked off with the first prize for the best exhibition at the Convention of the newly organized Eastern Federation of Lapidary and Mineralogical Societies held in Washington, D. C., October 25-27, 1951.

And not only did Baltimore take the hand-some silver bowl in competition with the displays of the dozen or more clubs from other regions represented at the meeting; its mem-

bers also won a number of the individual awards.

Mr. James W. Anderson received a first prize for his fine hand-made silver set with hand polished stones. (Mr. Anderson, of course, was the prime mover in the founding of the Baltimore guild and is now president emeritus. He and Mrs. David E. Wallis, the current president, led the Baltimore delegation of about fifty members who attended the sessions in Washington.)

Mr. Gregory Zatkovich, Jr., who has been doing lapidary work for only about 5 months, won second prize for cabochons. Mr. James W. Poetzsch took third prize for hand-made silver of modern design; and Mr. Edward W. Geisler, who is a member of both the Baltimore and Washington clubs, gained two prizes—one for a hand-carved piece and another for silver jewelry.

This record of successes, needless to say, has been exceedingly gratifying to the entire Baltimore membership. Those who went to Washington greatly enjoyed the entire program of lectures, field trips and motion pictures, but most of all they were delighted by the recognition which the Guild and its exhibitors received despite the youth of their organization.

Ruth G. Emmart, Pub. Chm.  
3551 Newland Road  
Baltimore 18, Maryland



A fine exhibit by members of the Gem Cutters Guild of Baltimore, Md., at the first convention of the Eastern Federation of Mineralogical and Lapidary Societies at Washington, D. C., October 25-27, 1951.

### Chicago Rocks and Minerals Society

The many specimens of rocks, minerals, shells and fossils donated by members, changed hands by the customary way of "Silent bidding" at the annual auction for 1951 on Saturday evening Nov. 10th., held by the Chicago Rocks and Minerals Society. This is the only source of income apart from the dues for the club, which also helps eliminate duplicates from individual collections and add new specimens to them.

During intermission in the bidding, the regular monthly meeting was held. Mrs. Helen Cooke very ably introduced Mr. and Mrs. Clell M. Brentlinger of Kenilworth, popular members of the club and well known hobbyists. Stones, shells, and silver was the topic of Mrs. Brentlinger's lecture assisted by Mr. Brentlinger with beautiful kodachrome slides, showing excellent photography of several interesting groups of rocks, shells and jewelry from their wonderful collection.

The Brentlingers have at present an exhibit of their shells, stones, and silver work in the Wilmette Public Library, which will remain through November.

The society will hold their next meeting December 8th. in the Greenbriar Field House, Peterson Ave., Chicago.

### December Meeting

The Chicago Rocks and Minerals Society was entertained by an informative and interesting talk on the Blackhills, of South Dakota. Dr. Paul M. Wright, chairman of the Department of Geology at Wheaton College, Illinois, was the speaker at the club's last meeting December 8th. The lecture was illustrated by slides and specimens.

The display tables attracted much attention which included exhibits from the Grand-Girards, Gertrude Hannen, and Dorothy Gieser. The various specimens were very interesting.

The sympathy of the club go to ex-treasurer, Mr. Andersen on the sudden death of Mrs. Andersen.

Bertha J. Alberts, Pub. Chm.  
310 Washington Blvd.  
Oak Park, Ill.

### Illowa Gem and Mineral Society

Our local affiliation of the Midwest Mineralogists has just had a complete reorganization following a dinner meeting on Saturday night, Oct. 27, in the huge auditorium of the Davenport Lend a Hand Club. There were members and guests there from a radius of 60 miles, taking in Iowa and Illinois. And because our members are from Western Illinois and Eastern Iowa, we combined the two state names and called ourselves The Illowa Rockhounds. The membership is composed of mostly professional men and women who seek this hobby as a means of relaxation and good fellowship. Our new name is Illowa Gem & Mineral Society.

The director of the Davenport Public Mu-

seum spoke at the meeting and invited the entire membership to join the museum and act as caretakers of the large display of rocks, fossils and minerals there. And in return we could have the Geology room for our meetings.

The newly elected officers were as follows: President—Irving W. Hurlbut of Davenport, Iowa. Vice president — Charles P. Adams, Rock Island, Illinois. Secretary—Mrs. Dora Hoxey, Davenport, Iowa. Treas.—Mrs. Irene Sheets, Bettendorf, Iowa. Named to the board of directors were as follows: Ed. Ahlers of Rock Island, Illinois, Jerry Keefe of Davenport, Iowa, Russell Neuwerk of Moline, Illinois, Alonzo Williams of Hampton, Illinois.

After the meeting the newly elected president and his wife, Mrs. Irving W. Hurlbut, invited the directors and officers out to their home for a special meeting on November 29th. After the special meeting the directors and officers will enjoy a personal tour of the large Rock Crystal collection of Mr. and Mrs. Hurlbut. A special display of over a thousand pounds of fluorescent minerals will be exhibited under four different Ultra Violet Lamps. Following refreshments, the special meeting will be adjourned.

Irving W. Hurlbut, President  
2602 East 32nd. Road, R. R. 1  
Davenport, Iowa

### Yavapai Gem and Mineral Society

Nickel as a strategic mineral very much in demand was the theme of a talk by Albert Pessin, of the Iron King mine, at the regular meeting of the Yavapai Gem and Mineral Society held Tuesday evening, Nov. 6, 1951, in St. Luke's parish house, Prescott. He was introduced by Floyd Purviance, vice-president.

Pessin spoke of the "nickel basket of the world"—Sudbury, Ontario, Canada and other spots where nickel occurs. Although nickel, or small amounts of it, can be found frequently in minerals, he said, economic ore deposits of it are exceedingly rare. In 1950, he continued, the world production of nickel was 160,000 tons. Canada produced 125,000 tons; Russia, 27,000 tons; the United States, 900 tons, all by-products from zinc and copper smelters. But the United States consumed 96,000 tons of nickel in 1950, and 75 to 80 per cent of that tonnage came from Canada.

"The United States," he said, "produces 900 tons of nickel, about half of one per cent of world production, and uses about 96,000 tons a year—about 60 per cent of the world production. We should be thankful that our good neighbor Canada controls the nickel basket of the world and sells us the major portion of her production, because without it our defense program would be greatly curtailed."

Harold Butcher  
P. O. Box 937  
Prescott, Arizona

## PUBLICATIONS RECENTLY RECEIVED

### Report on Bristol Dry Lake

The history and geology of a desert lake now dry and the economic deposits contained in it are the subject of a new report issued by the Division of Mines, according to Olaf P. Jenkins, Chief of the Division.

Hoyt S. Gale, a former member of the staff of the U. S. Geological Survey, is the author of recently-published Special Report 13, "Geology of the saline" deposits, Bristol Dry Lake, San Bernardino County, California. His researches in the area have occupied him intermittently since 1916; this report is a condensed presentation of his results.

Among the minerals commercially produced from Bristol Dry Lake deposits are gypsum, sodium chloride (NaCl, table salt), and Calcium chloride. Considerable reserves of celestite (strontium sulfate) are available in the lake if the commercial demand should warrant mining.

In addition to a map of Bristol Dry Lake area the report contains an appendix consisting of 19 drillers; logs of holes bored in the lake. The entire report, consisting of 21 pages, 2 figures, and one plate, sells for 35c.

California residents please add 3 per cent sales tax. The report may be ordered from the California Division of Mines, Ferry Building, San Francisco 11, California.

### Report on Jade

The second printing of a report on jade, recently issued by the Division of Mines, is now available, according to Olaf P. Jenkins, Chief of the Division.

The report, entitled, "Nephrite jade and associated rocks of the Cape San Martin region, Monterey County, California", by Richard A. Crippen, Jr., was so enthusiastically received that the entire first printing was exhausted within three months.

The discovery of gem-quality jade along the sea-worn cliffs south of Monterey is the subject of the paper, released as Special Report 10-A. In a sea cove near a huge offshore sea stack, nephrite jade was found in place in schist. Because this is the first place nephrite jade was found in bedrock, it has been aptly named Jade Cove.

Photographs of the locality and of jade specimens illustrate the report, and depict clearly the geologic relationship of the jade to associated rocks. An accompanying map shows the location of jade discoveries in the region.

Fourteen pages of text and fourteen figures constitute the report, which sells for 25c. California residents please add 3 per cent sales tax to their remittance. The report may be ordered from the California Division of Mines, Ferry Building, San Francisco 11, California.

### J. C. Filer Catalog

J. C. Filer & Son, 1344 Highway 99, San Bernardino, Calif., recently issued a 34-page illustrated catalog on mineral specimens, cutting material, lapidary supplies, jewelers tools, sterling silver findings, Geiger counters, U. V. lamps, and books. The catalog is free. Send for your copy today!

### J. J. Jewelcraft Catalogs

J. J. Jewelcraft, 2732 Colorado Blvd., Los Angeles 41, Calif., recently released two catalogs. One catalog is on jewelry tools. This is a 28-page, profusely illustrated publication. The other catalog features blank mountings. It contains 20 pages and it too is profusely illustrated. There is a nominal charge of 25c for each of these catalogs but with each catalog is enclosed a coupon worth 25c in trade.

### Arizona Zinc and Lead Deposits

Bureau of Mines (University of Arizona), Tucson, Ariz., have released a bulletin on "Arizona Zinc and Lead Deposits". This is a 118-page publication, contains 25 figures, and is priced at 60c per copy (free to residents of Arizona).

### Indiana Publications Price List

Indiana Department of Conservation (Geological Survey), Bloomington, Ind., have released a 28-page price list on their Geological Survey publications. The price list is free.

### Virginia Limestones and Dolomites

Virginia Geological Survey, Charlottesville, Va., has released Bulletin 66 Industrial Limestones and Dolomites in Virginia: Clinch Valley District, by Byron N. Cooper. It contains 259 pages, 24 plates, 18 figures.

### Smithsonian Institution Reports

Smithsonian Institution, Washington 25, D. C., has released four interesting reprints (from their official report for 1950). These are:

Energy from fossil fuels, by M. King Hubbert, pp. 255-272; Permafrost, by Robert F. Black, pp. 273-301; Earthquakes in North America, by B. Gutenberg, pp. 303-316; Wolf Creek meteorite crater, Western Australia, pp. 317-325.

### Australian Bulletins

Western Australia Geological Survey, Perth, Western Australia, has released two bulletins as follows:

Bull.102—Greenbushes Mineral Field, by R. A. Hobson and R. S. Matheson, 219 pp., 17 figs., 9 pls.

Bull.104—Some Economic Aspects of the Principal Tantalum-Bearing Deposits of the Pilbara Goldfield, North-West Division, by H. A. Ellis, 93 pp., 3 figs., 9 pls.

### Quebec Reports

Department of Mines, Quebec, Que., Canada, has issued the following bulletin:

Geological Report 35—The Geology of Eastern Gaspe, by H. W. McGerrigle, 168 pp., 3 figs., 17 pls.

## SOME COMMENTS ON THE 25th ANNIVERSARY NUMBER

### His Greatest Pleasure of Life!

Editor R&M:—

May I extend to you my sincerest congratulations for your wonderful work in issuing ROCKS AND MINERALS these many years.

I have been receiving it for 20 years. Each new issue is awaited for eagerly. To have been a member of the mineralogical fraternity has been the greatest pleasure of my life. We all owe you a debt of gratitude for serving us so well.

Earl L. Calvert  
San Gabriel, Calif.

Nov. 6, 1951

### An Outstanding Issue!

Editor R&M:—

The 25th Anniversary Number of ROCKS AND MINERALS has arrived. To say that I like it is a gross understatement. I think it an outstanding issue. Every one I have talked to locally is equally enthusiastic. I suppose it isn't possible but I can't help wishing that each issue might contain an article of the caliber of those in the anniversary number.

Louis W. Vance  
So. Pasadena, Calif.

Nov. 5, 1951

### Real Contribution to Mineralogy!

Editor R&M:—

I wish to join in congratulating you on your success in publishing such a fine magazine as ROCKS AND MINERALS for twenty-five years. You have made a real contribution to mineralogy and I know you have given pleasure to a great many people. I wish you continued success.

Alonzo W. Quinn  
Dept. of Geology  
Brown University

Oct. 30, 1951

### You Also Collect Friends!

Editor R&M:—

My sincere thanks are extended to Arthur Montgomery, Cliford Frondel, and to all contributors and advertisers for the splendid 25th Anniversary Issue of R&M. This issue was a complete surprise to me but it made me feel very happy to learn that so many fine people are associated with me in the delightful hobby of mineral collecting and who saw fit to devote their valuable time and money to such an issue. It seems that when you collect minerals you also collect friends.

My prayers, along with those of your many friends, are that the good Lord will see fit to leave you among us for many years and in good mind and health!

Harry S. Grahm  
New York, N.Y.

Nov. 2, 1951

### R & M of Inestimable Benefit!

Editor R&M:—

Please accept my sincerest congratulations on your 25th Anniversary Number. You and your magazine have been of inestimable benefit in continuing my enthusiasm for collecting minerals. The measure of your success is attested in the magnificent 25th anniversary issue of your magazine, so ably handled by a few of your many friends.

May your work continue for many years to come!

Woodland G. Shockley  
Vicksburg, Mass.

Nov. 23, 1951

### A Splendid Tribute!

Editor R&M:—

I want to be among those to congratulate you on the 25th Anniversary of ROCKS AND MINERALS. The September-October, 1951, issue was a splendid tribute for the 25 years of labor and devotion you have given to make ROCKS AND MINERALS the important magazine it is today.

I was one of the original subscribers to ROCKS AND MINERALS and through the years I have watched with pleasure the growth of the magazine which has come about through your energy and enthusiasm.

Chris A. Hartnagel  
Slingerlands, N. Y.

Dec. 11, 1951

### Shows His Appreciation!

Editor R&M:—

I want to add my congratulations to the many you must be receiving daily and I know no better way of showing my appreciation for your fine magazine than by recommending it to my friends and students. I enclose six more subscriptions and check for \$18.00.

The 25th Anniversary Issue is excellent and I hope it will draw more of the same type of articles in the future.

Best of luck as you begin your second 25 years!

H. Stanton Hill  
Pasadena, Calif.

Nov. 4, 1951

### A Noble Struggle!

Editor R&M:—

Congratulations upon the 25th Anniversary of your excellent publication. My best wish is that the Golden Anniversary Number may be as good!

I did not realize until I read the words of your friends, what a noble struggle you have made for the cause of mineralogy as a hobby and as a science.

Florence Y. Smith  
Sacramento, Calif.

Nov. 15, 1951

**Biggest Find on Next Field Trip!**

Editor R&amp;M:—

I have received the 25th Anniversary Number and have read it with much interest. The contributors of this special issue and the co-editors have done an excellent job. They have given us some interesting and meritorious facts about the Editor and his work in publishing the magazine that he is too modest to reveal himself.

Please accept my most sincere congratulations for your most excellent service and a wish that on your next field trip you will make the biggest find of your life.

May your life be long with strength to carry on!

W. J. Shacklette, M. D.  
Hodgenville, Ky.

Nov. 9, 1951

**A Perfect Variety!**

Editor R&amp;M:—

The Sept.-Oct. 1951 issue of R&M was one of the finest issues of any magazine pertaining to minerals that has, probably, ever been issued. A perfect variety. Let's have more issues like this.

Russell Filer,  
J. C. Filer & Son  
San Bernardino, Calif.

Nov. 11, 1951

**Ads Bring Good Results!**

Editor R&amp;M:—

We have been getting good results with our full page ads in R&M and expect to continue them. Congratulations on the 25th anniversary issue!

Plummer's  
San Diego, Calif.

Nov. 8, 1951

**The Leading Publication!**

Editor R&amp;M:—

Words are not satisfactory means of describing the pleasure your wonderful work in maintaining ROCKS AND MINERALS has brought to me in the past years. To me ROCKS AND MINERALS is the leading publication in this field and with you behind the wheel it is certain to continue as such.

This year I am going to try to stimulate more interest among our club members and get more subscriptions for you.

Charles L. Gschwind  
Cincinnati, Ohio

Dec. 31, 1951

**R & M Is a Favorite!**

Editor R&amp;M:—

Your magazine is a favorite in our group (Rochester Earth Science Society) and we all quote from your articles, advertisements, and other interesting departments. The 25th anniversary issue was a delightful surprise.

Mrs. Dana Rogers  
Rochester, Minn.

Nov. 6, 1951

**Appreciates a Good Mixture!**

Editor R&amp;M:—

The 25th Anniversary issue of R&M was superb. I am a ceramic petrographer and x-ray diffractionist so I appreciate a good mixture of scientific and "beginners" articles on collecting and studying rocks and minerals.

C. Burton Clark  
Pittsburgh, Pa.

Nov. 5, 1951

**Zodac Stone for the Editor!**

Editor R&amp;M:—

Congratulation on your 25th anniversary as Editor of R&M. I wish you 25 more years of good health, which is the pay streak of life.

I am sending you a "Zodac Stone", which is the only nice mineral I have found in two years of prospecting. This stone will take a nice polish and you can say, "One Zodac Stone in 200,000 yards of basalt".

Edgar C. Stinger  
Seattle, Wash.

Oct. 27, 1951

(The above mineral is a unique specimen of grayish-green chalcedony. It is 3x3 inches in size, is partly spotty, partly banded, and partly good gem quality. It comes from the Black River basalt quarry in Seattle at which quarry Mr. Stinger is employed).

**Wishes Good Fortune for the Future!**

Editor R&amp;M:—

Kindly allow me to offer my best wishes and hearty congratulations on your 25th anniversary of ROCKS AND MINERALS. I know that this must be the source of a tremendous amount of personal pride to have been certainly, the undoubted leader during that time in popularizing the hobby of mineral collecting which under your leadership has grown to such proportions as it has today. Here is a sincere wish that you will have the very best of good fortune in the future as you have had hard work in the past!

James B. Palmer  
Reno, Nev.

**The Best of the Bunch!**

Editor R&amp;M:—

May I sincerely congratulate you on that 25th anniversary number. I shall always keep it. And I have many times wondered what you looked like and from that fine photo I now know that you are a nice old gentleman. Now I wonder if I will ever meet you personally.

As I have told you once before, ROCKS AND MINERALS is the best of the bunch and I have noticed that no matter where you are visiting the genuine rockhounds, you will see ROCKS AND MINERALS being consulted. Keep up the good work.

Irving W. Hurlbut  
Davenport, Iowa

Nov. 3, 1951

## ROUGH MINERALS

One of the World's finest Stocks of Rough Minerals for manufacturing Precious Stones.

From the Finest Faceting Quality to Inexpensive Cabochon Material.

New 1952 Descriptive Catalog features a variety of minerals to satisfy the most discriminating lapidaries.

— Free of Charge —

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New York 36, N. Y.

## NEW ARRIVALS

### SLAB MATERIAL

**Brazilian Agate:** 90c, \$1.00 and \$1.25.

**Cherry Tiger Eye:** 40c, 60c, 70c, 75c, \$1.00.

**Golden Tiger Eye:** \$1.40.

**Flower Obsidian:** 45c, 50c, 55c, 60c, 65c, 75c.

**Petrified Bone:** 85c, \$1.15, \$1.50, \$1.80.

**Turittella:** 50c, 60c, 75c, 80c, 90c.

**Cady Moss:** 40c, 80c, \$1.00.

**Agate Wood Sections:** \$1.50, \$2.00.

**Orpiment:** 05c, 10c, 15c, to \$12.00.

Catalog mailed on request, 10c in stamps asked to defray cost. Write to:

**Peter & Edwards**

**"House Of Minerals"**

248 Somerville Ave., Somerville, Mass.

## 60 TO 150 MILLION YEARS OLD

**Dinosaur gastroliths (Gizzard Stones).** All first class, good color and natural polish, no two alike. Two of six sizes 4 inch to 1 inch. One pound petrified dinosaur bone with each dozen. \$3.50 a doz. delivered.

**Gastroliths** from prehistoric bird. 125 to 200 to ounce. Look like polished gem stones. Very rare and interesting. \$1.00 per ounce.

**Calcite** crystals in quartz. Fluoresce bright red in different shades. Will add color to any collection. From 1 to 10 lb. pieces 50 cents lb. delivered. 15 lbs. or over 25 cents lb. here.

Have much fluorescent material that will make colorful exhibit or collection. If interested, write.

I sell only Wyoming material I have collected and guarantee any item to please or money refunded.

**B. J. KEYS**

Box. 572

Worland, Wyoming

### NEW—EXCLUSIVE—BEAUTIFUL

A gift of distinction for those who desire something different and something better.

#### Mineral and Gem Paper Weight

Contains semi-precious gems and minerals in their original crystal forms, all identified, enclosed in glass and magnified. Three inches in diameter. Gems cannot be handled and cannot be harmed by dust.

A superb Christmas gift for the desk or table of that valued friend and a thing of beauty forever.

First time ever seen or offered for sale.

Price only \$2.50 each postpaid.

Satisfaction guaranteed or money refunded.

**WILFRED C. EYLES**

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